Volume 1, No. 2 $3.50

Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers

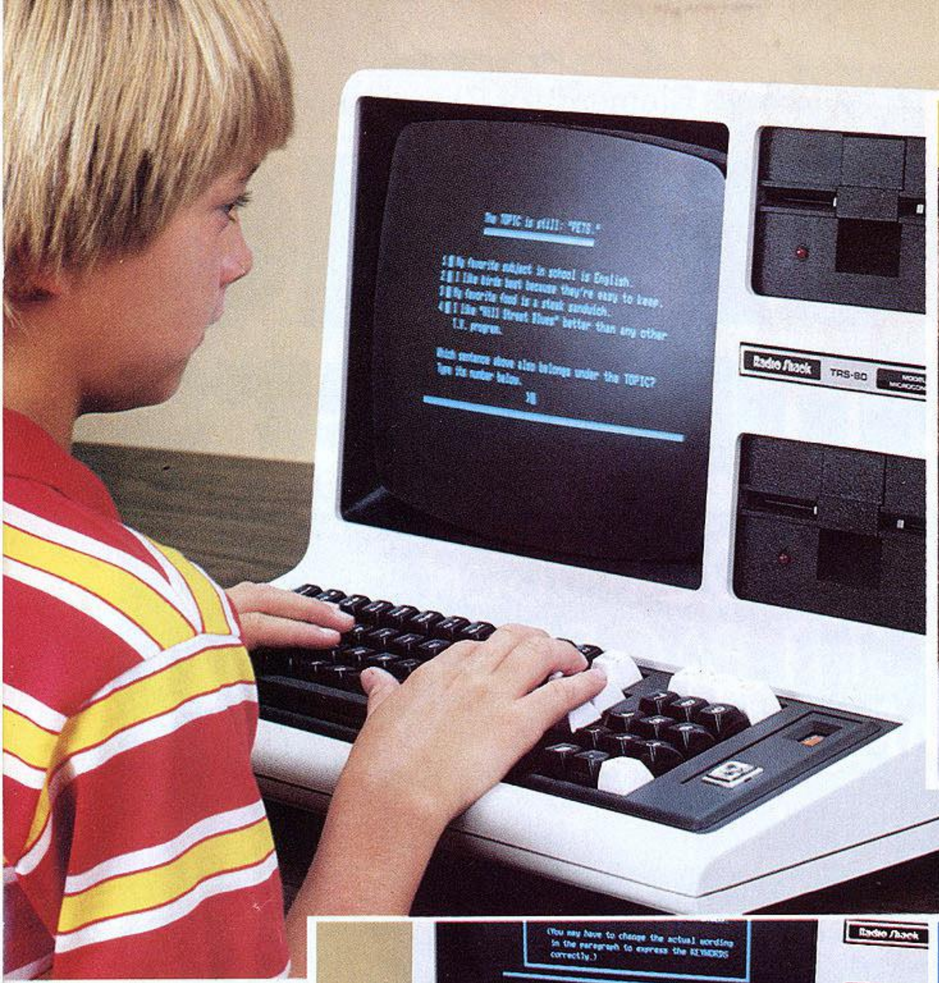
Published by Scholastic Inc. October 1983

CELEBRATE OCTOBER WITH EIGHT PAGES OF COMPUTER FUN

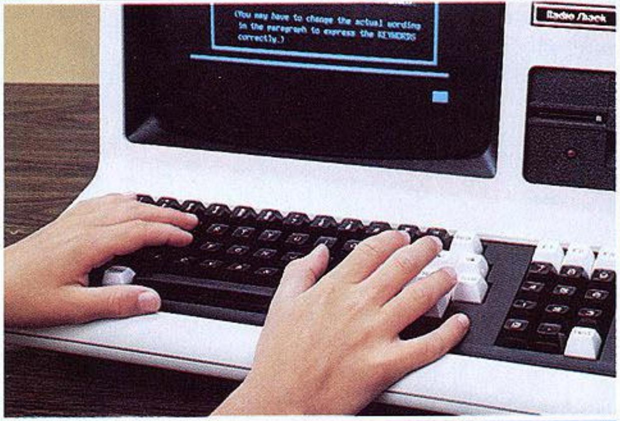
HAPPY HALLOWEEN

Micros are for Primary Kids, Too! • Put Parents on your Computing Team

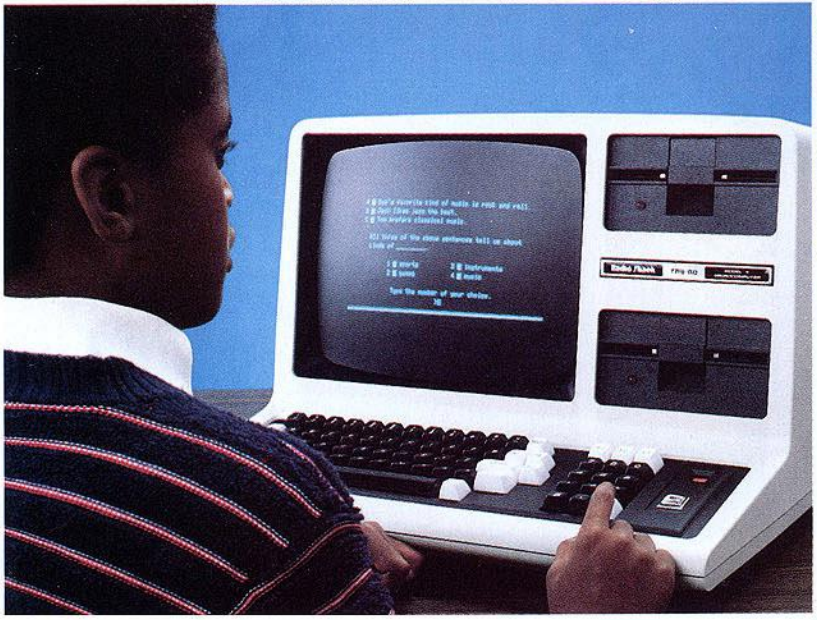
Plus Six Zippy Task Cards for Young Programmers


The TOPIC is still: "PETS."
1 My favorite subject in school is English.
2 I like birds best because they're easy to keep.
3 My favorite food is a steak sandwich.
4 I like "Hill Street Blues" better than any other T.V. program.
Which sentence above also belongs under the TOPIC?
Type its number below.
Radio Shack
TRS-80

Radio Shack
TRS-80


(You may have to change the actual wording in the paragraph to express the KEYWORDS correctly.)
Radio Shack

AND NOW...
It's time
for some
EXERCISE...
Radio Shack
TRS-80


Type the number of your choice.
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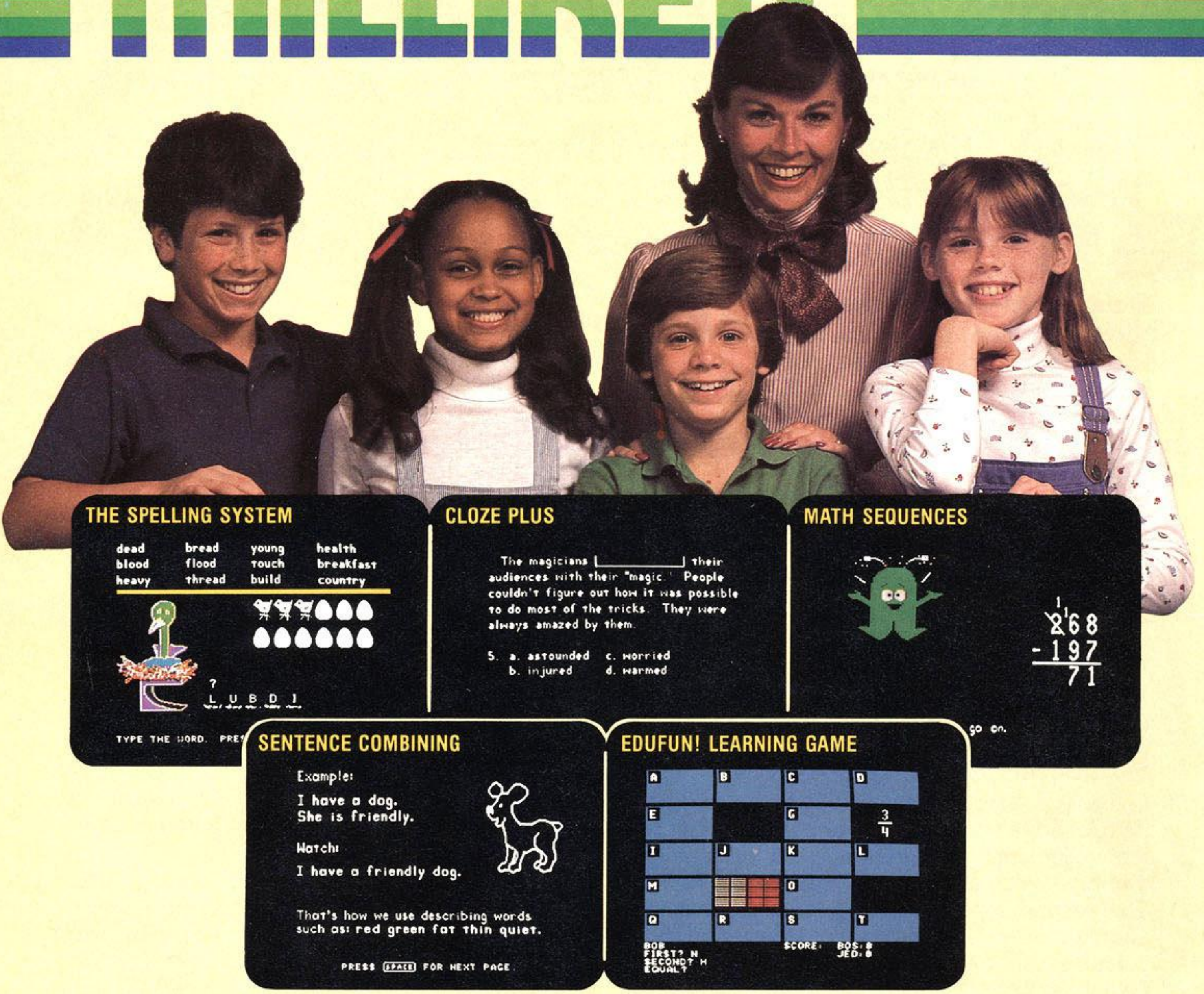

THE SPELLING SYSTEM

```
dead     bread    young    health
blood    flood    touch    breakfast
heavy    thread   build    country
?
L U B D I
TYPE THE WORD.  PRES
```

CLOZE PLUS

```
The magicians [          ] their
audiences with their "magic." People
couldn't figure out how it was possible
to do most of the tricks. They were
always amazed by them.

5. a. astounded   c. worried
   b. injured     d. warmed
```

MATH SEQUENCES

```
  1
  ⁱ
 268
-197
  71
go on.
```

SENTENCE COMBINING

```
Example:
I have a dog.
She is friendly.

Watch:
I have a friendly dog.

That's how we use describing words
such as: red green fat thin quiet.

PRESS [SPACE] FOR NEXT PAGE.
```

EDUFUN! LEARNING GAME

```
A  B  C  D
E     G  3/4
I  J  K  L
M     O
Q  R  S  T
BOB                 SCORE:  BOB: 8
FIRST? H                    JED: 8
SECOND? H
EQUAL?
```

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TEACHING and computers

October • 1983

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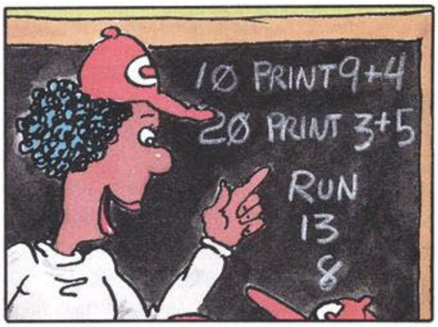

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CIRCLE 8 ON READER SERVICE CARD

From the Editor

An Octoberfest of Computer Activities for You

IT'S OCTOBER! TIME FOR witches, ghosts, and computers. That's right, computers. Let this be the year computers make their Halloween "de-boo" in your classroom. You supply the computers; we'll supply the activities. How about a word processing lesson where kids help Beulah the Witch concoct a bubbling brew? Or a screen game in which students use Logo commands to hunt down "Mr. Bones" in a haunted house?

October has so many other delightful holidays that we just couldn't stop with Halloween so we decided to offer you an entire **Octoberfest** of computer activities. The fun starts on page 22. Other activities include a flowchart game for Columbus Day and a program written in honor of Fire Prevention Week, October 2–9.

Assistant Editor Lorraine Hopping wrote the fire prevention program. That's Lorri in the picture above, testing it out on fourth grader Lisa Bauch. In the program, kids help rescue Muffin the kitten from a blazing fire, and learn a few fire safety tips in the process.

Are more and more parents asking you about computers? In **Put Parents on Your Computing Team,** page 18, Editorial Assistant Lesli Rotenberg tells how schools across the country are getting the "computer" word to parents. In some cases teachers are even putting parents to work in school computer labs — with winning results!

A perfect example of using parents in computer instruction is found at the Lawrence Hall of Science in Berkeley, California. There, five- to six-year-olds and their parents take an introductory course together in computers.

The object of the course is not to teach children programming at an early age, say the teachers. Rather, it's to teach kids how to use the computer to learn.

Assistant Editor Lorraine Hopping tests out her computer program, *Rescue Muffin,* on fourth grader Lisa Bauch.

And learn they do. Under the direction of energetic instructors, and with the assistance of patient parents, primary students learn their letters and numbers through lively computer-related activities. See **A Handful of Frogs and Eight Jars of Water,** page 14.

Don't miss October's **Program of the Month:** *Around the World,* page 36. In the program, students travel with book character Phileas Fogg around the world in a hot air balloon, identifying land forms as they go. What a way to learn geography!

Logo lovers, we have a monthly section just for you. Called **Logo Notebook,** page 51, each month it will contain a gold mine of Logo activities. Each lesson builds on the previous month's, so tear them out, file them in a spiral binder, and by May you'll have a complete Logo manual.

Other highlights in this month's *Teaching and Computers* include six nifty programming task cards, a poster on proper disk care, two worksheets for primary graders, software suggestions, and much, much more.

So, on with October!

Mary Dalheim

Mary Dalheim
Editor

TEACHING and computers

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Academic Apple. Written for parents and teachers who are interested in helping youngsters learn with the aid of an Apple computer. R0033-2, paper, $10.95.

Apple Logo Primer. This handbook makes learning Logo with an Apple II easy for anyone — no previous experience needed! R0314-6, paper, $14.95.

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Kids and the VIC. An entertaining, step-by-step approach to BASIC programming on the Commodore VIC computer for beginners. R3671-6, paper, $19.95.

My Students Use Computers. An excellent guide that provides a scope and sequence of objectives and activities for integrating computers into the K-8 curricula. R4805-9, cloth, $23.95.

1,2,3 My Computer and Me. By joining in the escapades of the rabbit and turtle, children discover and learn all about Logo. R5228-3, paper, $10.95.

Triple Brain Trust. An excellent game for improving basic reading and question-answering skills with topics like General Sports and Movie Trivia. R8790-9, book/disk, $34.95.

Turtle Sourcebook. A comprehensive guide and workbook for adults working with children learning Turtle graphics. R7890-8, paper, $21.95.

Using Microcomputers in the Classroom. An excellent introduction to the personal computer, with the emphasis on applications of micros in schools. R8144-9, paper, $12.95.

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Idea of the Month

MAKE A KEYBOARD COMPANION

By Michael Milone

PROGRAMMING'S A SNAP WHEN KIDS USE A KEYBOARD COMPANION TO REMIND THEM OF COMMANDS.

IF YOUR YOUNG PROGRAMMERS HAVE TROUBLE remembering commands, try a keyboard companion! This cardboard reference tool fits snugly over a keyboard unit and provides students with a handy glossary of programming commands. Here's how to make a keyboard companion:

1. Start with a piece of paper that measures the full length and width of your keyboard unit.

2. In the middle of the paper, cut a hole that will allow all the keys to stick out. (See samples.)

3. On the upper left side of the companion, list these BASIC commands:

PRINT: PRINT tells the computer to "print" information that follows it. Examples: PRINT 3 + 4, PRINT "I LIKE MY COMPUTER."

GOTO: GOTO tells the computer to go to another part of the program. Example: GOTO 30 (Go to the line numbered 30 and follow the instructions there.).

INPUT: INPUT tells the computer to ask for a number or letter(s) from the user. Examples: INPUT A (for numbers); INPUT A$ (for letters).

LET: LET assigns values to variables. Examples: LET X = 5; LET A$ = "YOUR NAME."

NEW: NEW clears the computer's memory so that you can start writing a new program.

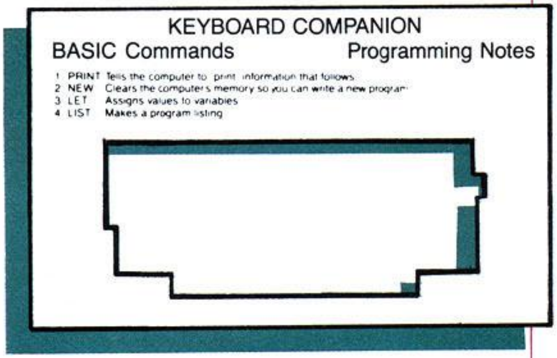
LIST: LIST tells the computer to show all of the instructions to a program that's stored in memory.

SAVE: SAVE tells the computer to store information on a disk. Example: SAVE BANANAS.

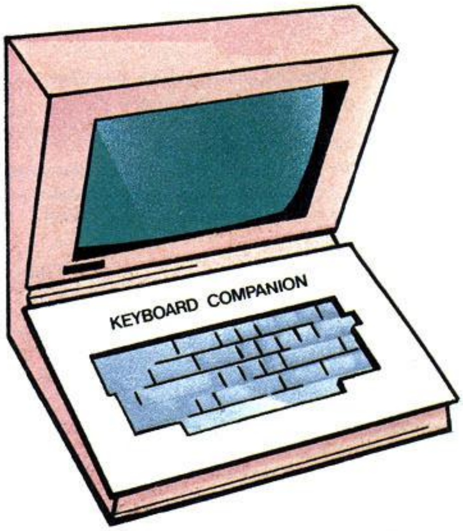
LOAD: LOAD takes a program or information from a disk and puts it into the computer. Example: LOAD BANANAS.

4. You can make similar lists using Logo commands, word processing commands, or more advanced BASIC commands, such as IF-THEN, FOR-NEXT, and READ-DATA.

5. In the upper right corner of the companion, write "Programming Notes " in black marker. Laminate the keyboard. Then in the upper right area, students can use markers to write in programs they're working on, new commands, special function commands (such as CTRL-C), or a list of programs on their file disk. They can erase their notes easily with a cloth.


KEYBOARD COMPANION
BASIC Commands
Programming Notes
1 PRINT Tells the computer to print information that follows
2 NEW Clears the computer's memory so you can write a new program
3 LET Assigns values to variables
4 LIST Makes a program listing

The keyboard companion.


KEYBOARD COMPANION

The keyboard companion fits snugly over the keys.

Michael Milone is editor of Skillcorp Publishers in Honesdale, PA.

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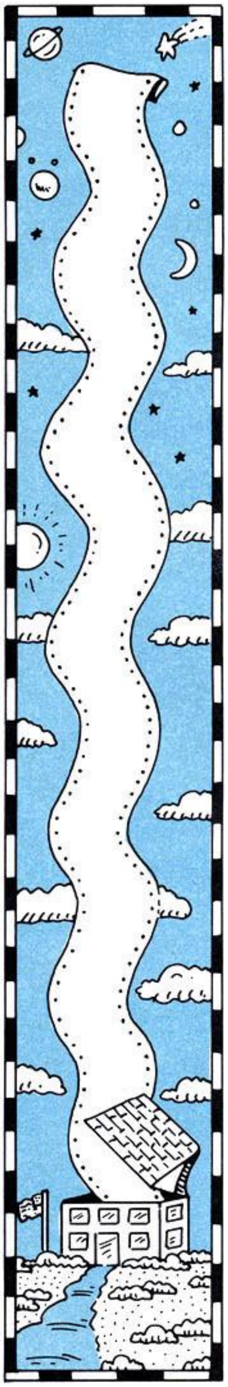
Update

News for Computer-Using Teachers



Electronic Bulletin Board for Educational Applications

Information about what's happening in educational computing is now available on an electronic bulletin board supported by San Diego State University in California. Called the Ed Tech PMS (People's Message System), the bulletin board posts public messages, and announces new products, courses, and events related to educational technology. Anyone with a computer and modem can dial 619/265-3428 Monday to Friday from 4:30 P.M. to 8 A.M. and anytime on weekends to access the service.

California Schools Get Apple Computers

Almost all of California's 9,250 elementary and secondary schools now have Apple IIe microcomputers thanks to Apple's "Kid's Can't Wait" program. Apple Computer, Inc. donated $21 million worth of computers in an effort to provide every school in California with a microcomputer. The company also arranged orientation sessions for teachers and administrators at local retail dealers.

Two Million Micros in Public Schools by 1988

There will be two million microcomputers in U.S. public schools by 1988, according to a study on computer purchasing patterns conducted by Talmis, a consulting firm for microcomputers and software. That's an average of 20 per school! The study found that public schools had 291,000 micros in June, 1983. About 100,000 of those computers were in elementary schools. Anne Wujcik, research director, says that elementary school computer purchases are growing at the fastest rate.

Ten Cities Get Computer Instruction

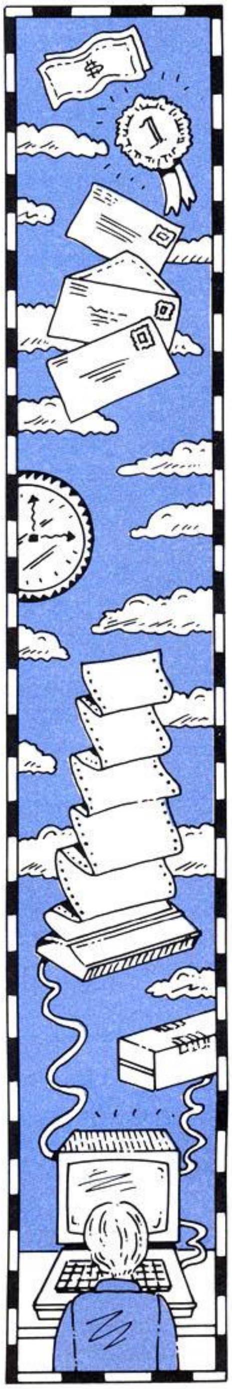
More than 50,000 teachers and other participants in 10 cities nationwide will learn the basics of computing at free tutorials and open houses during October, November, and December. The free instruction is part of a program called "Catch On to Computers." Sponsored by General Foods' Post Cereals and Atari, the program will run in collaboration with local school districts in Washington, DC , St. Louis, Denver, Chicago, Newark, New Orleans, Houston, Atlanta, San Francisco, and Los Angeles. For information on program sites in your area, contact Mark Clemente at 212/977-9400.

Students Get Little Computer Time

The average elementary school student spends less than 30 minutes at the computer each week according to a survey conducted by Johns Hopkins University. The survey says that students spend 19 minutes each week on programming and computer literacy, 13 minutes on drills and remedial work, and 12 minutes on games.

Young TRS-80 Programmers Compete for Prizes

Young programmers are eligible to win one of 10 cash prizes in the second annual programming contest sponsored by *80 Micro*, a magazine for TRS-80 users. All prize-winning programs in three age categories, 11 and under, 12 to 14, and 15 to 18, will be published in the magazine. The deadline for entries is November 1. For contest information, contact *80 Micro*, Wayne Green Inc., Peterborough, NH 03458.



In My Opinion

Does anybody out there have a plan for computers?

By Beth Lazerick

Every time I open a magazine that contains an article about computers, I read about how many schools now have computers, and how much money school systems are spending on computer hardware. Nowhere do I read about how well computers are being integrated into the school curriculum, or how many teachers are learning about computers. We appear to be overly concerned with purchasing as much computer hardware as possible, and not concerned enough with purchasing the right kind of equipment or developing an effective plan for using it.

What school systems need is a plan for computers that covers all the purchasing and instructional decisions the system will encounter. Such a plan should do the following three things.

1. Consider how the rest of the school district is using computers. Too many times I have seen elementary schools within the same school district buy different computer systems without consulting one another. Now there is nothing wrong with buying different kinds of computers if the decision is part of an overall purchase plan.

Sometimes different computers provide different services. For example, some computers are better for teaching Logo turtle graphics while others are better for word processing. And because keyboards and languages vary on different computers, some teachers want their students to learn to use several kinds. But it is difficult to train teachers and trade software if every school in the district has a different kind of computer.

2. Allot some computer money for teacher training. There are many ways schools can prepare teachers to provide computer instruction. For example, schools can conduct in-service days, pay teachers to take college courses, or organize night classes for teachers. Computers are useless if teachers don't know how to operate them and use them in the classroom.

I recently visited a classroom where six kids were badgering the teacher while the computer stood vacant. Imagine! What this teacher didn't realize is that when the computer is used effectively, she is no longer the sole fountain of knowledge in the classroom. Teachers must learn to manage a classroom with a computer. If this is done correctly, some children will be clustered around the computer while others are engaged in equally useful activities in another part of the room.

3. Integrate software into the curriculum. Teachers need to evaluate the courses they are teaching and adjust them to incorporate appropriate software. Without a plan, computers will be used for trivial tasks like drill and practice.

Drill and practice is useful, but it doesn't take full advantage of the computer's power like simulations, word processing, and programming. Computers can do more than drill and practice; they can teach kids how to think.

Let's take another look at how we are using computers in our schools. We need to make a plan for purchasing computers, training teachers, and creating a sound curriculum that uses computers as learning tools. Without this thrust, the effective use of computers in schools will be seriously delayed. ☐

Beth Lazerick is the coordinator of elementary computer education for Shaker Heights City School District in Shaker Heights, Ohio. She is also a member of Teaching and Computers' *advisory board.*

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COMPUTER DIRECTIONS FOR SCHOOLS publishes manuals to assist staffs in the planning, organization and implementation of various computer-related activities at their schools. The manuals were written primarily with the elementary school in mind; however, many of the ideas can be easily adapted at the junior high level. The material is presented in an easy-to-read format, with helpful attachments to facilitate effective school computer management.

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COMPUTER DIRECTIONS FOR SCHOOLS

Question Corner

DO YOU HAVE A COMPUTER QUESTION? Send it to *Teaching and Computers* expert, Molly Watt. Molly was a teacher and school administrator for 20 years before the computer bug bit. Now she teaches computer education courses at Keene State College in Keene, New Hampshire. She is also writing a book about teaching Logo. Write her in care of *Teaching and Computers,* 730 Broadway, New York, NY 10003.

Dear Molly: My school gave me money to buy a printer for my classroom. I'm delighted, but I'm not sure how to select a good one. Help!

Dee Wallis
Ballwin, MO

FIRST DECIDE WHAT you want from your printer. Do you want typewriter quality printouts for writing classes? Do you want high speed printouts for math classes? What about charts or graphs?

Different printers perform different tasks well, so you must determine what tasks you want your computer to be best at. Here are some specific points to consider when comparing printers.

1. Noise—Listen to each printer in operation. Some printers are very noisy. I prefer the quiet type.

2. Speed—Notice how fast the print-letter-quality print, but they are generally much slower than dot matrix printers, and more expensive. A dot matrix printer usually works fast, but then it produces poorer letter quality printouts. You may have to choose between speed and letter quality.

3. Paper—Printers that operate by a thermal heat process require more expensive paper, while printers with a tractor feeding mechanism use relatively inexpensive paper. (A tractor feed printer has wheels or pins on each side of the platen, making it possible to feed one long, continuous roll of paper through the printer.) Some printers have friction feed rollers that work like a typewriter. These allow you to use either pin feed paper (with all the little holes down the side) or your own stationery.

4. Letter Quality—Take a close look at the letter quality of the printouts. On some printers, descending lower case letters (*g, j, p, q,* and *y*) do not descend from the line. For example, a *g* might look like an *s*. That can be confusing for primary kids.

5. Graphics—Find out if the printer reproduces graphics as well as type. This feature is important if you want to enable students to share their Logo graphics on the bulletin board, keep them in their journals, or take them home. A graphics printer also allows you to use special software packages, like *Crossword Magic,* a program that I use to create crossword puzzles. (*For more information on* Crossword Magic *and other software recommended in this column, check the listing on the next page.*)

BAM
BAK
SNERXXX
MMZZZRRR
BOP
RZZZZ
TAK
TAK

Beware of noisy printers!

Illustrations by Patrick McDonnell

What's new in simulations?

Dear Molly: Do you know any good science simulations I can use with my class?

Alan Wolf
Milwaukee, WI

UNFORTUNATELY, most good science simulations are not for elementary grades. But you can adapt some of these programs to suit upper level elementary students. There's a good science series called *Search Series* that includes four such programs. The first, "Geology Search," takes a science class on a dig for oil. "Energy Search" looks for new sources of energy. "Archeology Search" has kids participate in the dig of an historic site. And "Geography Search" lets them navigate an ancient ship to a new world.

Another excellent simulation for science classes is *Tellstar,* a program that locates, identifies, and provides information on stellar objects. Gifted upper elementary students might enjoy *Three Mile Island,* a simulation that allows you to control a nuclear reactor. There's also *Odell Lake,* a food chain simulation, and *Quakes,* a program that teaches how to calculate the distance to the epicenter of an earthquake.

Dear Molly: Seymour Papert seems to think that all kids will love Logo, the language he invented. Do you agree?

Suzanne Tierney
Medford, MA

I AGREE WITH THE youngster in Westchester, New York, who said, "Logo is nice. But I like horses better!" Logo is just one more tool. It's a marvelous tool to be sure, but I've had many students who, given the choice, prefer programming in BASIC. My point? Logo isn't the be-all and end-all of educational computing.

Dear Molly: I don't want to seem sexist, but I've noticed that the girls in my sixth grade class are not as interested in computers as the boys are. Any suggestions?

Daniel Reeves
Philadelphia, PA

A RECENT STUDY shows that girls are just as interested in computers as boys are. But boys are often more aggressive in getting access to them. Are you providing equal access in your class? Or do the "aggressive boys" monopolize computer time?

To ensure fairness, set up clear schedules for computer use. Some students feel more comfortable using the computer alone at first; others prefer working together. Be flexible.

In planning, remember that the computer is more interesting if it relates to something you enjoy. Many girls (and boys, too) like to write letters to pen pals. Others enjoy drawing, designing graphics, or creating music. Provide your students with more possibilities than just drill and practice and programming.

Also consider whether your sixth grade girls have any female role models, like teachers, parents, or friends, who enjoy using the computer. If they don't seem to, invite women who work with computers to talk to the class.

Two software companies that are committed to creating nonviolent, nonsexist, challenging software for all ages are The Learning Company and Children's Television Workshop. ☐

SOFTWARE

Crossword Magic
Hardware: Apple II, II Plus, III (48K), Atari 800 (40K)
Grade level: All
Price: $49.95
Contact: L & S Computerware, 1589 Fraser Drive, Sunnyvale, CA 94087; 408/738-3416.

Odell Lake
Hardware: Atari 400, 800
Grade level: Grades 1–9
Price: $38 for Elementary Biology set that also includes *Circulation* and *Odell Woods.*
Contact: Minnesota Educational Computing Consortium (MECC), 2520 Broadway Drive, St. Paul, MN 55113; 612/638-0638.

Odell Lake and Quakes
Hardware: Apple II (32K)
Grade level: Upper elementary to high school
Price: $36 for Science Volume 3 set that also includes *Fish, Minerals, Odell Woods,* and *URSA;* $18 for members.
Contact: Minnesota Educational Computing Consortium (MECC), 2520 Broadway Drive, St. Paul MN 55113; 612/638-0638.

Search Series
Hardware: Apple II (48K), TRS-80 Model III (32K)
Grade level: grades five to twelve
Price: $180 each set
Contact: McGraw Hill, 1221 Avenue of the Americas, New York, NY 10020; 800/223-4180.

Tellstar
Hardware: Apple II (48K)
Grade level: Upper Elementary to adult
Price: $39.95; $79.95 for advanced version with multiple star tables
Contact: Information Unlimited Software, 281 Arlington Avenue, Berkeley, CA 94707; 415/525-9452.

Three Mile Island
Hardware: Apple II, II Plus (48K)
Grade level: Upper Elementary to adult
Price: $39.95
Contact: MUSE Software, 347 N. Charles St., Baltimore, MD 21201; 301/659-7212.

PUBLISHERS

Children's Television Workshop
One Lincoln Plaza, New York, NY 10023;
212/595-3456.

The Learning Company
4370 Alpine Rd., Portola Valley, CA
94025; 415/851-3160.

Classroom Happenings

By Lesli Rotenberg

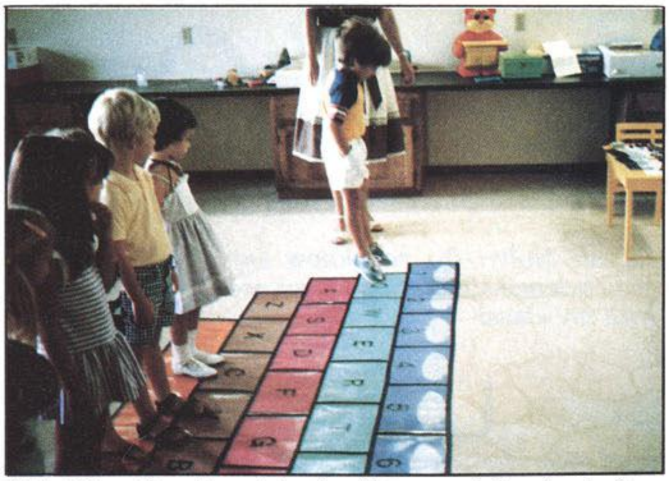
Every month in this column we'll talk about exciting computer activities that are happening in classrooms across the country. If your class is working on an interesting project, we'd like to hear about it. Write to: Classroom Happenings, *Teaching and Computers*, 730 Broadway, New York, NY 10003.

THE KEYS TO COMPUTERGARTEN

The computer keyboard is a lively world of birds, rabbits, houses, and worms to the children in Trisha Ainsa's demonstration kindergarten class at the University of Texas in El Paso.

To learn typing skills, the children fly, hop, step, and slither to reach letters on a vinyl keyboard-on-the-floor. Trisha tells the children that the top row of keys represents the birds in the sky, so they must fly to those keys. The second row is where rabbits roam, so kids hop to those keys. Humans live in houses on the third row, so kids step to them. And worms inhabit the keys below, so kids slither to them.

Once children have mastered reaching keys on the "floor board," they go on to an actual keyboard and learn to strike the keys with their fingertips. They study one row of keys at a time. Each time, the kids get their fingertips stamped with the letters each finger is supposed to strike. Trisha says the kids in her pilot class loved the stamps so much that they refused to wash their hands.


Kids in El Paso, Texas, learn the location of letters on a keyboard-on-the-floor.

These exercises comprise the first phase of the "Computergarten" program designed to teach preschool and kindergarten children about computers. Other phases teach them to operate computers, to program in Logo and BASIC, and to use software. The entire program is presented with stories, rhymes, and games.

To plant a "Computergarten" in your class, contact Trisha Ainsa at the Department of Educational Psychology, University of Texas at El Paso, El Paso, TX 79968; 915/747-5300.

Characters from *Featherby's Fables* —a TV show produced with the help of Tecumseh Harrison School in Vincennes, Indiana. (See Silicon Chip Sagas.)

SILICON CHIP SAGAS

What do Detective Dan Disk Drive, Chip Bit Master, Lady Dollar Bottom, and Smedley M. Bezel have in common? They are all characters in a the first episode of a three-part puppet series about computers. The series is written and produced for public television by two puppeteers, Don Kirk and Jim Stock. Bill Hopper, the principal of Tecumseh Harrison Elementary School in Vincennes, Indiana, serves as executive producer for the show.

He and three of his teachers, Elaine Loesch, Connie Watjen, and Kathy Dotson, oversee the production of the series. They review scripts, write teachers' guides and lesson plans, and test out the shows on their students.

Called Featherby's Fables, the series teaches primary school children about science. Three of the programs focus on computers.

The first episode, "The Case of the Back-Biting Banker," illustrates what computers can do and what they can't do. In this tale, Detective Dan discovers that the bank president, Smedley M. Bezel, fed erroneous data about his customers' accounts into the bank computer.

The second episode teaches about special purpose computers. Called "You Never Miss It Till It's Gone," the episode features Thomas T. Video, a young boy who bets his uncle Max that he can't go through a single day without using a computer.

The final episode takes a boy named William on a fantasy voyage inside the computer. He meets Bit, who is looking for his byte, and an old guy from ROM, who has been in the computer since the beginning.

The program is available to teachers in video tape. Contact Great Plains National ITV Library, PO Box 80669, Lincoln, NE 68501; 800/228-4630. (The cost is $120 per program, with discounts for additional purchases. The company offers free previews and allows one free duplication.)

TIME CAPSULE ON A DISK

"To the people of the future: This time capsule contains information about life in the 1980s. We made it so that future generations will know about their history."

That message will appear on a monitor 50 years from now when the elementary students in Bob Barlow's summer computer class gather again at Orange County Community College in Middletown, New York, to replay their time capsule. That's right, *replay.* Most time capsules are sturdy containers that store historical records, but this class stored its historical data on a disk!

Students spent weeks inputting information that represents the 1983 time period. The disk contains mini-articles about trends, education, sports, politics, and technology of the day. An article called "Education: The Lighter Side," by students Madonna Becerra and Diane Stoeberl, describes a typical day in a contemporary classroom, from making paper airplanes to writing 500-word compositions. Graphics include a portrait of designer jeans, and animation of students on their way to school.

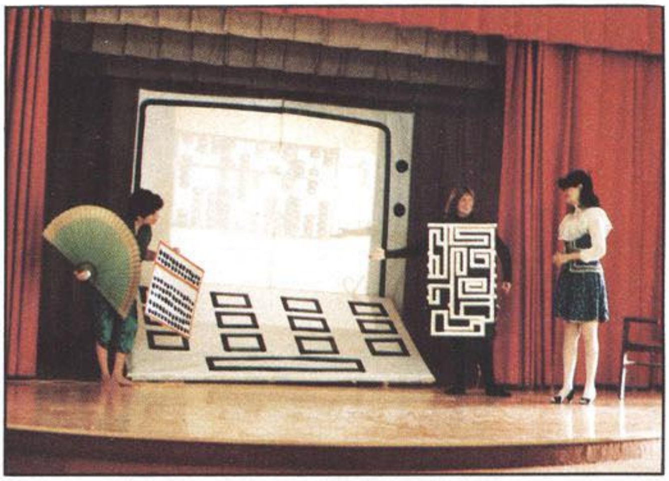
The students invited their parents and the local media to view the software at a special ceremony. Then they sealed it up and preserved it in the local college archives.

"Everyone ended up learning more about using computers than I could have taught in a conventional classroom setting," says Bob. "The best part was that the students governed themselves and shaped something of their own design."

COMPUTERS IN WONDERLAND

Remember a land where white rabbits wear pocket watches and mad hatters have tea parties? Some creative teachers in Virginia Beach, Virginia, renovated the wonderland of Lewis Carroll's classic tale to include giant computers and ROM chips.

They did it to teach the history of computers to sixth grade students at the Old Donation Center for the Gifted and Talented. The teachers, Judith Lewis, Patricia Terry, Cheri Lewis, Eileen Ryan, and Lillie Gilbert, wrote and starred in "Alice in Computerland," a play they presented to students on the first day of the computer literacy unit.



Teachers in Virginia Beach, Virginia, star in *Alice in Computerland,* a play about the history of computers.

As the curtain rises, Alice's parents are discussing computers. Alice falls asleep, and awakes in Computerland. There she meets ROM (Read Only Memory) who guides her through the history of computers.

Both the teachers and students enjoyed their adventure in Computerland. For more information on the play, contact Patty Terry, Old Donation Center for the Gifted and Talented, 5024 Meadow Pines Place, Virginia Beach, VA 23464.

LITTLE LOGO PROFESSORS

When 50 Atari sales representatives came to Sunnyvale, California, to learn Logo, they were surprised to discover who their teachers were—twelve 10-year-old fifth graders from John Braly Elementary School!

The students first learned to program when employees of the Atari Research Lab in Cambridge, Massachusetts, asked them to help debug their new Logo package. While the kids discovered Logo, three researchers observed and recorded where and how the package needed refining. Once the kids became skilled enough, they were encouraged to teach their friends to use Logo, too.

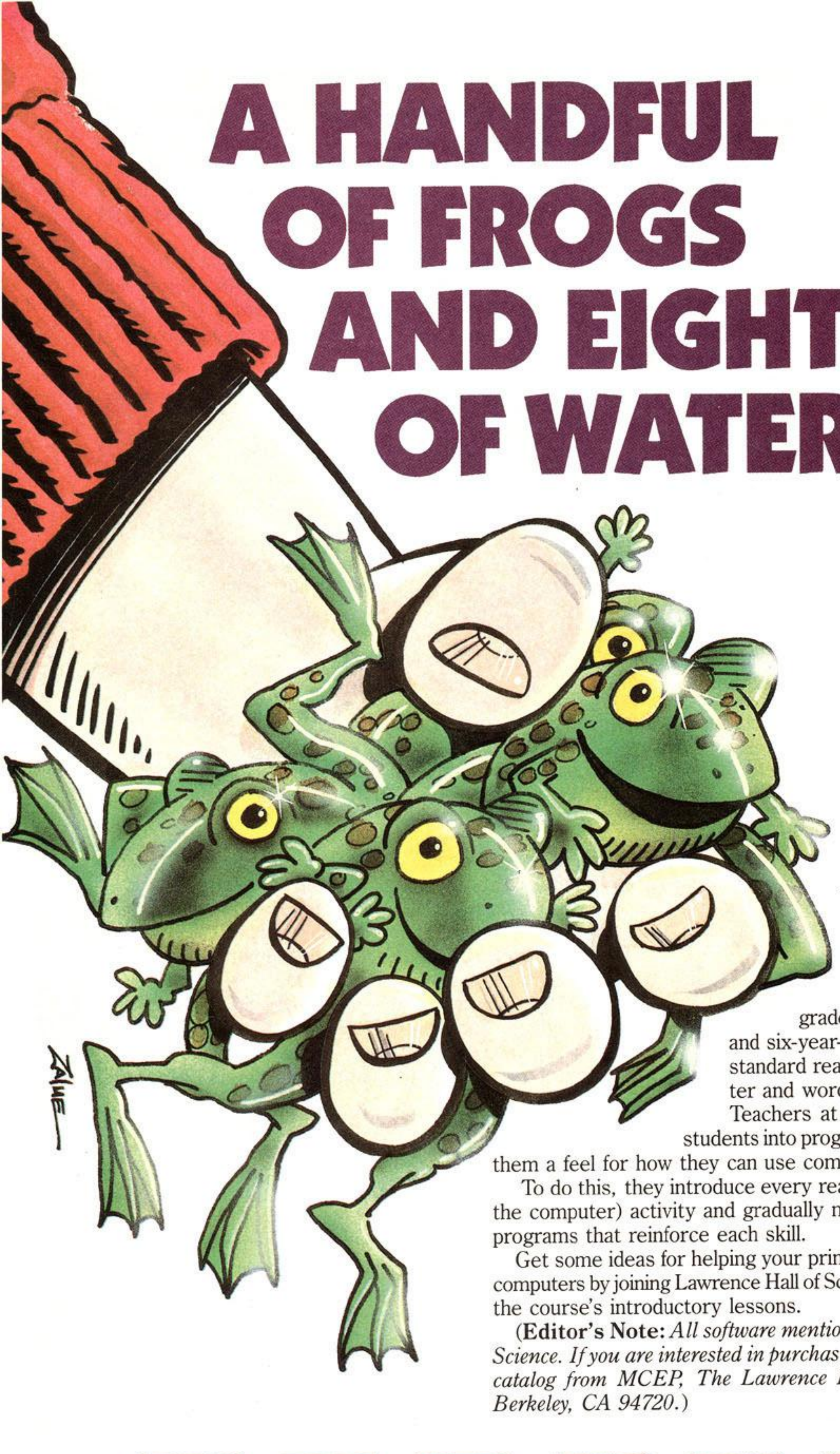
The 12 kids were such good teachers that Leslie Wolf and Bonnie Umphreys, company product managers, asked them to teach the entire Atari national sales staff to program in Logo. Each child supervised five sales representatives as they explored Logo. Leslie says they were great teachers. To avoid intimidating the adults, the kids waited until the end of each session to demonstrate their own programs! □

Lesli Rotenberg is an editorial assistant for *Teaching and Computers.*

A HANDFUL OF FROGS AND EIGHT JARS OF WATER

These are just two of the unusual tools teachers at the Lawrence Hall of Science use to introduce five-and six-year-olds to computers.

BY GERALD BOOTH



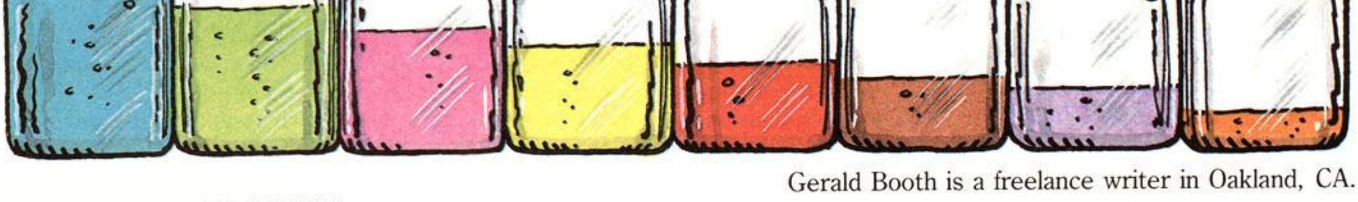
THE LAWRENCE HALL OF SCIENCE IS a center for developing and testing new science curricula. It is also the home of "Micros for Micros," a unique project for introducing computers to primary graders. At the Berkeley, California, center, five- and six-year-olds learn to use the computer to develop standard readiness skills like counting, estimation, letter and word recognition, and music awareness.

Teachers at the Hall say they are not trying to push students into programming at younger ages, but rather to give them a feel for how they can use computers to learn.

To do this, they introduce every readiness skill they teach with an off-line (off the computer) activity and gradually move to the computer where students run programs that reinforce each skill.

Get some ideas for helping your primary students develop readiness skills with computers by joining Lawrence Hall of Science instructor Linda Lipner as she teaches the course's introductory lessons.

(**Editor's Note:** *All software mentioned in this story was produced by the Hall of Science. If you are interested in purchasing any of the software, you can obtain a free catalog from MCEP, The Lawrence Hall of Science, University of California, Berkeley, CA 94720.*)



Gerald Booth is a freelance writer in Oakland, CA.

LESSON ONE

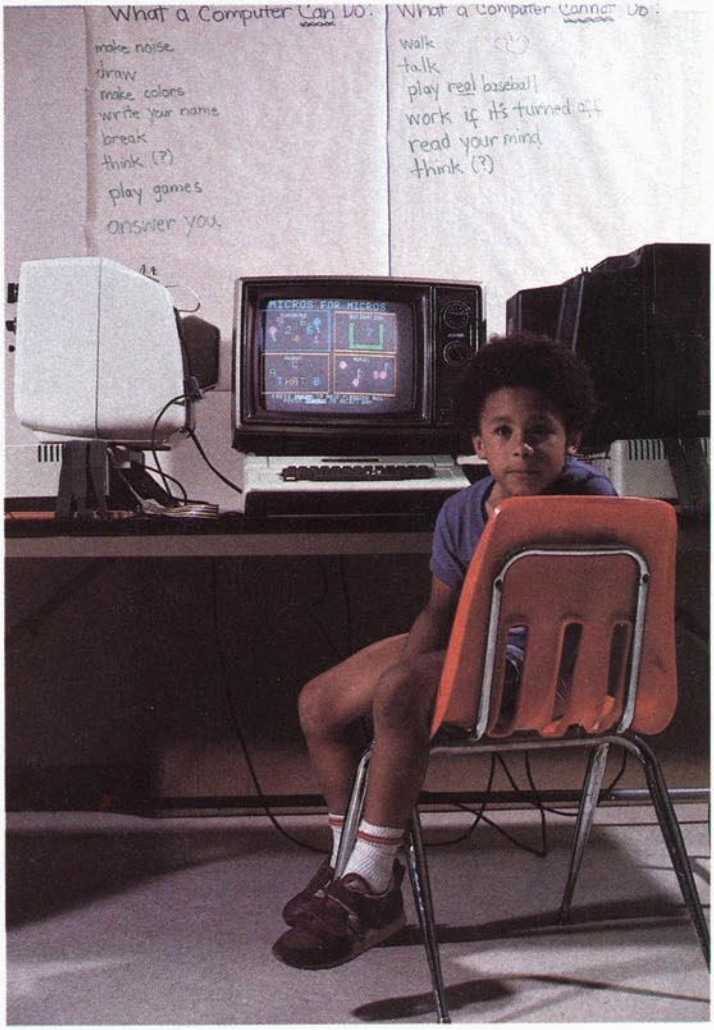
GETTING ACQUAINTED

"When we first offered our computer course," Linda says, "we asked parents to attend class to keep students under control and to help answer the children's many questions. We soon found that parents benefit, too. As they work with their child, they come to understand the thinking skills young children are developing and to detect any problems their child might be having with them.

"I begin our course by identifying the parts of a computer and showing students how the parts work together as a 'system.' I teach students how to load a program and how to use the keyboard.

Next, I ask students to name things they think a computer can and cannot do. Can it think? Can it make music? Can you talk to it? Some common answers for can-dos are draw pictures, make noises, and play games. The can't-dos are things like drive and eat. I list their ideas on a poster, placing any disputed answers, such as 'think,' in both columns followed by a question mark. At the end of each class, as students become more familiar with computers, we review their choices and revise the list."

Photos by John Hamamura

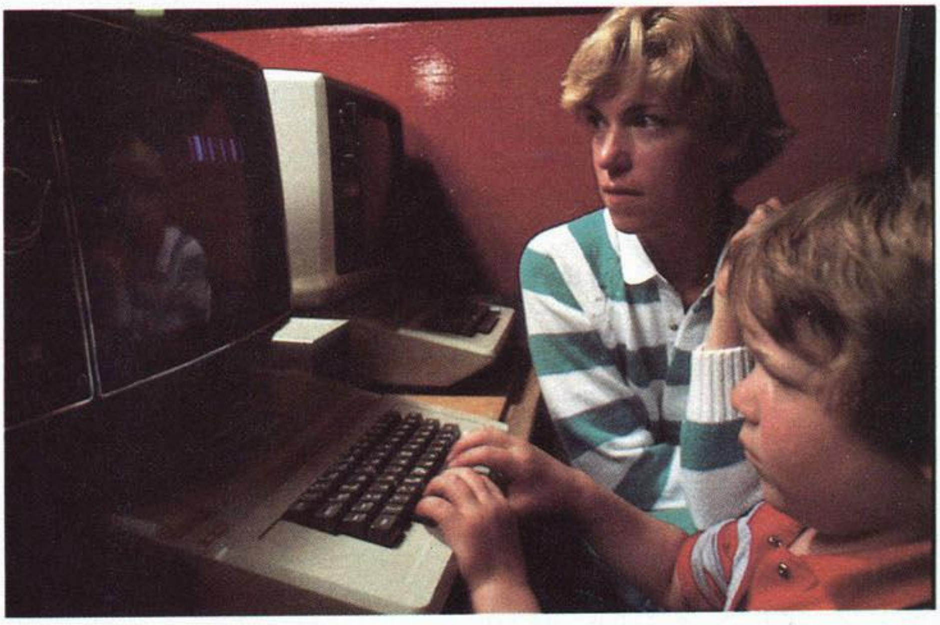

What a Computer Can Do:
make noise
draw
make colors
write your name
break
think (?)
play games
answer you
What a Computer Cannot Do:
walk
talk
play real baseball
work if it's turned off
read your mind
think (?)
MICROS FOR MICROS

First grader Kai Pridgen ponders what a computer can and cannot do.

LESSON TWO

COUNTING

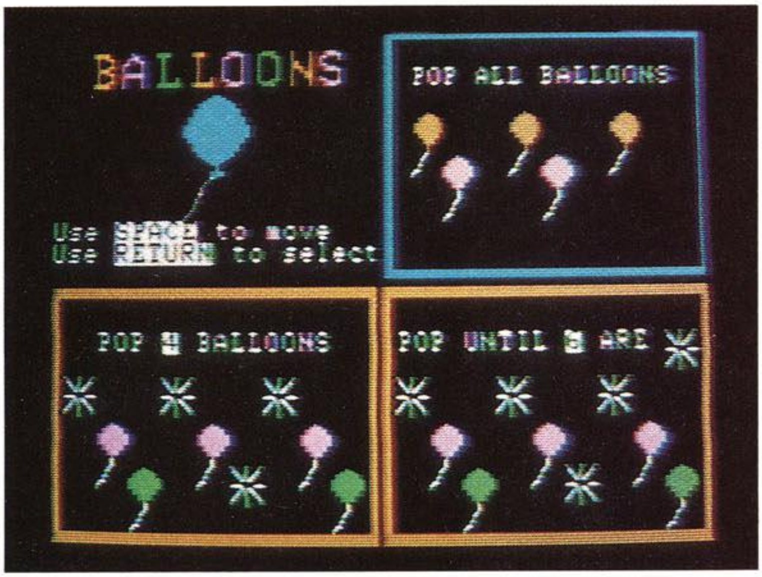
"We play a calculator game for helping students understand counting and number sequence. In this game, partners take turns entering the numbers one or two into a calculator until one person—the winner—reaches 11. *(Continued)*



Left: A camouflaged number from *Numerical Recognition.* **Above:** Jonathon Harris guesses the number while his mother, Martha, looks on.

(Continued from p. 15)

"On the computer, children play *Numerical Recognition*, a program that contains two different games. In one game, they count balloons by popping them. In another game, the computer either gradually draws a number until the student recognizes it or camouflages numbers for the student to uncover behind curtains."



Counting balloons in *Numerical Recognition*.

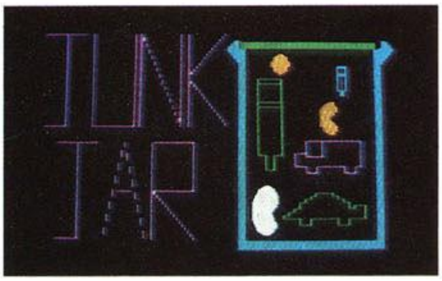
LESSON THREE

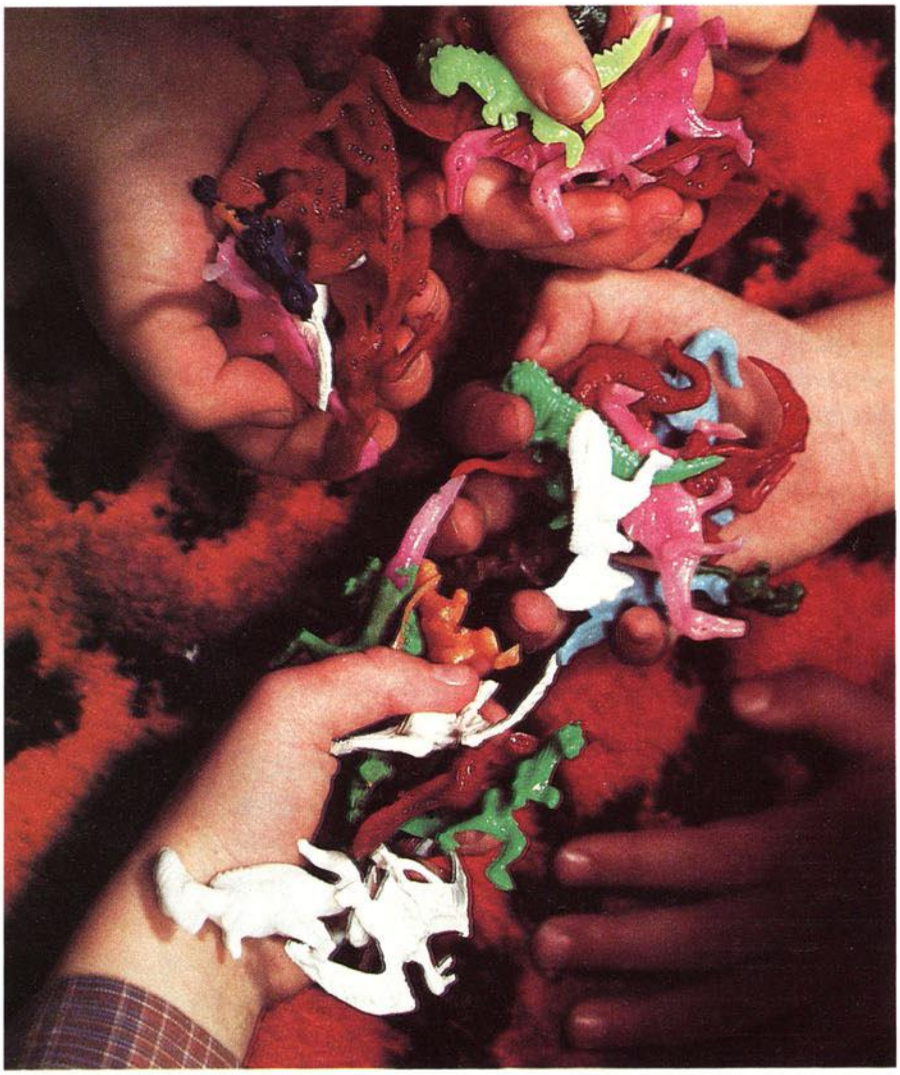
ESTIMATION

"We use plastic frogs or dinosaurs to give students practice at estimating. First I ask students how many frogs they can hold in one hand. I record their estimates, let each take a handful, and count them. We then compare the results with the initial guesses.

"Next, I ask them how many objects their adult partner can hold in one hand, and we repeat the process of comparing estimates with actual results. From here, there are a number of variations to take. I often hold up a jar and ask students how many child handfuls it will take to fill it and how many adult handfuls. Or, I might vary the size of the objects and ask them how this affects their estimates.

"Once we've completed the activity, students work with a computer program called *Junk Jar* in which the computer selects a random-sized jar and the child estimates how many objects it will take to fill it. Estimates usually improve dramatically as the activity progresses."





Left: Sample screen from *Junk Jar*.
Above: Comparing kid-handfuls and adult-handfuls.

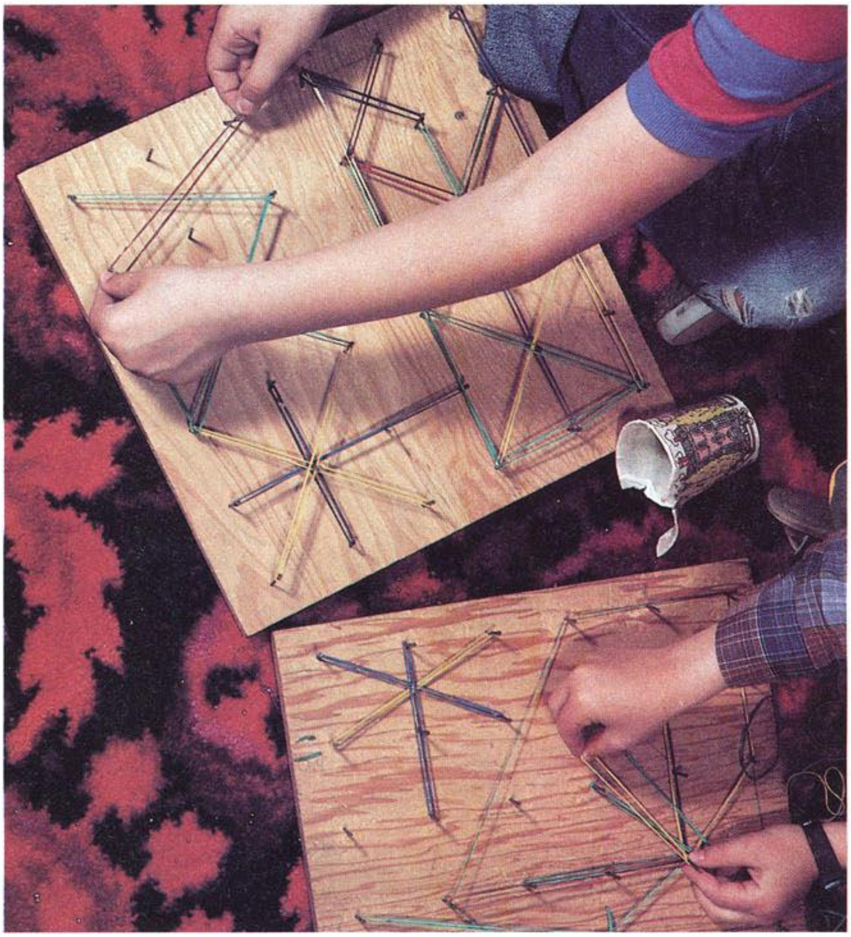
LESSON FOUR

LETTER & WORD RECOGNITION

"Lower case, upper case, italic, script.... Children learning to read are confronted with letters in a myriad of forms and styles. This activity exercises their visual and spatial skills to help them recognize the general shapes of letters.

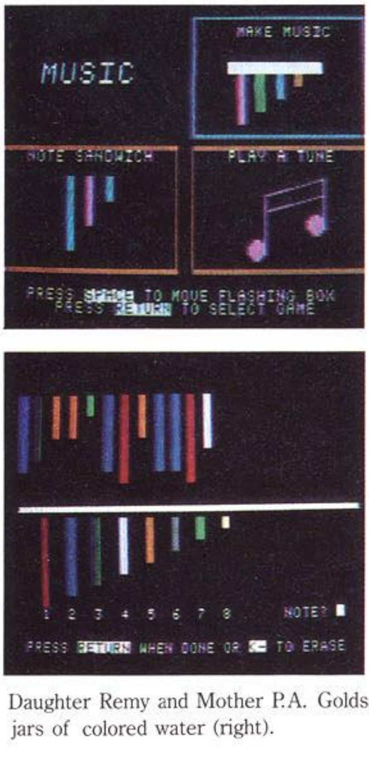
"Each child works with a partner to create letters by attaching rubber bands to square geoboards. First I ask them to create letters that consist of straight lines (I, T, A, M, for example). Next, we make letters with only curved lines (C, O, S). And finally, we make letters that have both curved and straight lines (R, B, G). To make students more aware of the shapes, I ask them to tell how they created a curved line on the square grid of the geoboard. Next they might make distorted letters and ask their partners to guess what letter they were made from. Or they might make elaborate letter designs and ask their partners to identify the hidden letters.

"*Funny Letters* is the computer program we use for this segment. The computer generates distorted letters and the child identifies their original form. Then the child types in distorted letters for his or her partner to name."



Students form letters using rubber bands and geoboards.

LESSON FIVE



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PRESS SPACE TO MOVE FLASHING BOX
PRESS RETURN TO SELECT GAME
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PRESS RETURN WHEN DONE OR <- TO ERASE
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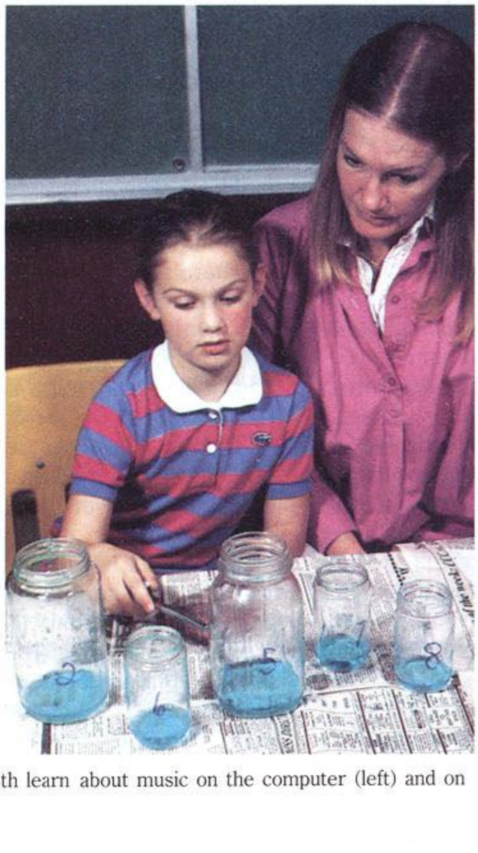


Daughter Remy and Mother P.A. Goldsmith learn about music on the computer (left) and on jars of colored water (right).

MUSIC

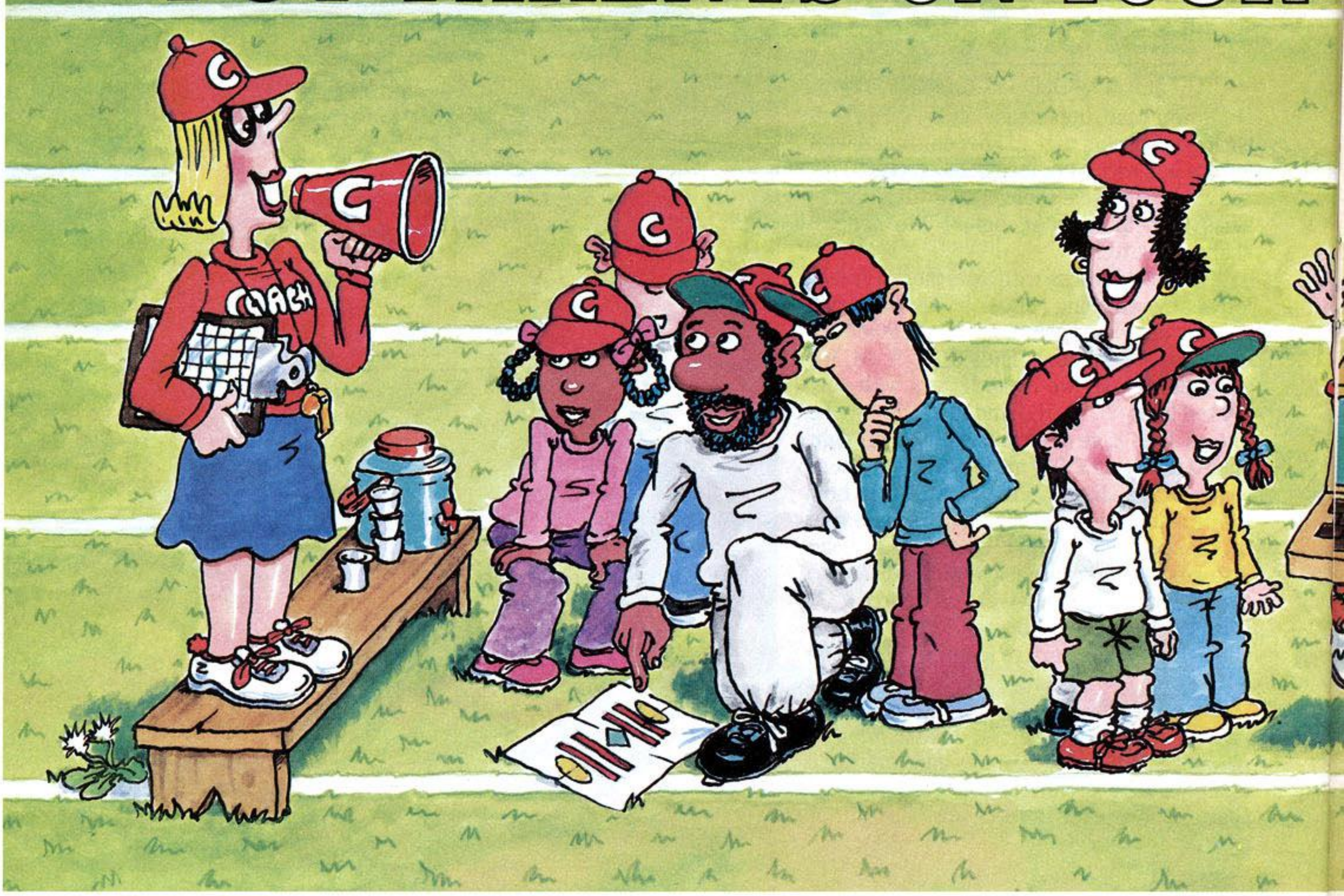
"Patterns are not only important in mathematics, they are also present in almost every other discipline, including music. Here we encourage students to look for and create patterns in sound.

"We give each child and adult a wooden mallet, various-sized jars, a ruler, and colored water. We ask them to use this equipment to answer these questions: What sound does an empty jar make when it's tapped by a wooden mallet? If you pour more water into the jar and tap the jar again, will the sound be the same? What happens when you add even more water? Can you discover a rule for making a high note or a low note? Can you arrange eight jars with different amounts of water to make a musical scale?

"I ask students to measure the volume of water and record data on the amount of water in each jar and its resulting sound.

"In a computer program, *Make Music,* students press the number keys (1–8) to create notes. As they hear the sound, they see the note as a colored bar on the screen. The computer remembers the sequence of notes a child plays and can replay this 'song' when the student hits RETURN."

PUT PARENTS ON YOUR



You're guaranteed a winning season when parents take an active role in their children's computer education.

***Dear Mr. Barlow:** Your computer class has been a superb experience for my daughter. She talks about it all the time at home. We parents know that computer literacy is a must for the children. And we appreciate all you are doing for them. But what about us? How can parents learn about computers so we can help our children, too?*

So reads a letter one concerned parent wrote to Robert Barlow, a teacher at Orange County Community College's Young Saturdays program in Middletown, New York. He and many other teachers are discovering that parents want to know what their children are learning about computers. Parents often conduct PTA or PTO bake sales and other fund-raising activities to purchase computers for their children's schools. But they don't always know what happens with the equipment they help buy.

Following are strategies teachers across the country are using to keep parents informed. Some teachers are conducting open houses, some are publishing newsletters, some are offering computer courses to parents, and some are even putting parents to work in computer classes and labs. All are finding that students benefit when parents know the score.

SHOW THEM THE GAME PLAN

There are lots of ways to let parents know what kids are learning in school. Here are just a few.

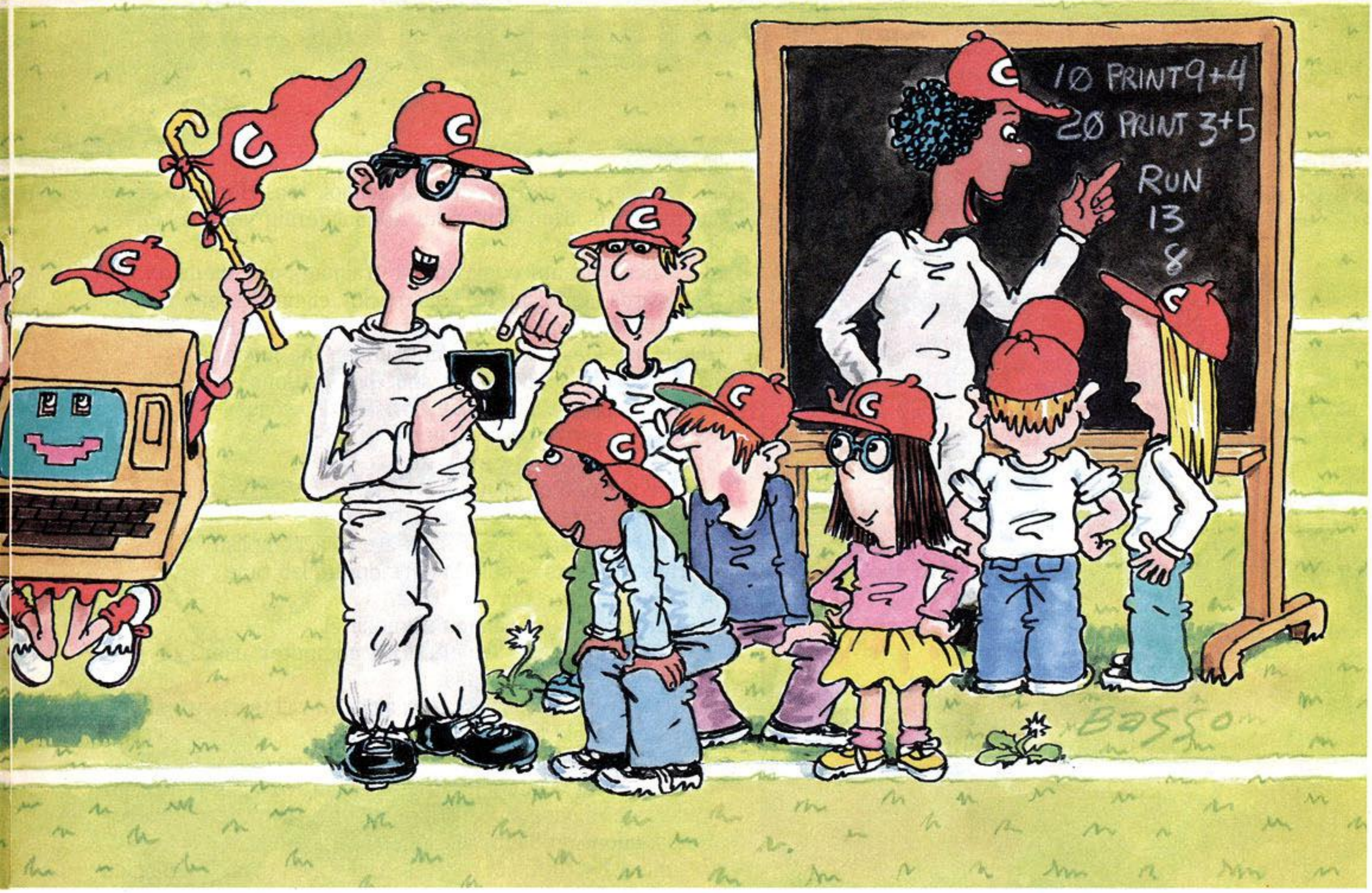
1. Conduct an Open House. Teacher Louise Robinson at the University School in Indiana, Pennsylvania, invited parents to class for a special program her students called "Turtle Tales."

To help parents understand what they had learned, the students developed an outline of all the material that had been covered over the school year. Then, each child chose a subject to write about and eventually present to parents. They divided into pairs, wrote cooperatively, and selected visual aids. They practiced their oral presentation for five days (about 45 minutes each day) prior to the open house.

Also on display at the open house was a continual video presentation of computer-generated pictures created by the children. Each student selected his or her "best picture" and submitted it to Louise. She compiled the pictures into an "Academy Awards" show.

"The open house was a great success!" Louise reports.

COMPUTING TEAM!



```
10 PRINT9+4
20 PRINT 3+5
RUN
13
8
```

"The parents were impressed with the children's ability to articulate what they had learned. And the kids enjoyed the opportunity to share their enthusiasm."

Louise says you may want to try variations on the open house theme. For example, you could have an "Academy Awards" to show examples of programs written by students. Or you and your students could produce a slide presentation featuring actual group computer lessons.

2. Read all about it! Teacher Leslie Thyberg and research assistant Sharon Lesgold produced a monthly newsletter with their demonstration class in Falk School-Learning Research and Development Center at the University of Pittsburgh.

Called *Turtle News*, the newsletter features student written stories and articles, and graphics designed by students. It also includes a regular column from Leslie or Sharon that reports on what the students are learning in class. The students work on the newsletter on a weekly basis during lab time.

3. Brag a little! One way many teacher spread the word is by inviting a local newspaper reporter to see what the kids are doing in class. You might even ask the students to write a press release, which they could distribute to local radio and television stations.

4. Dear Diary: Some teachers let children relay the news through personal journals. Each day, the children report how they used computers in class. At the end of every month, the kids bring their journals home for their parents to read.

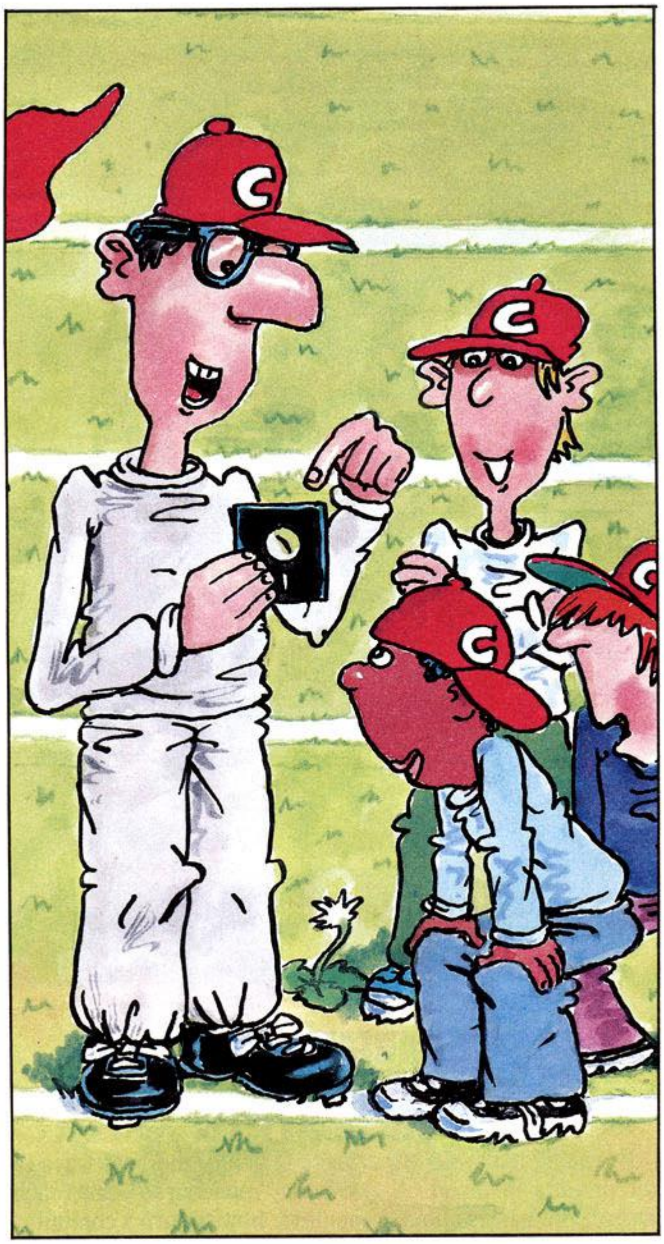
PUT PARENTS ON THE PRACTICE FIELD

Providing hands-on experience is one of the best ways to get parents involved. A two-hour "minicourse" can teach parents the basics about computers: how to turn a computer on; how to load a disk- or cassette-based program; how to initialize or format a blank diskette, and so on. Additional sessions can focus on programming in BASIC or Logo, how a computer works, or different kinds of applications software. Here are some tips from Joy Weiss, a teacher at Garden Gate Elementary School in Cupertino, California, for ensuring successful parent workshops.

1. Offer training sessions both during the day and in the evening.
2. Offer babysitting services. It's not expensive. At Garden Gate, a parent who loves children runs the service for a small fee.
3. Be excited. Your enthusiasm will spread to parents.
4. If your school doesn't have the facilities to train parents, inform them about courses offered by computer dealers or community colleges.

At Garden Gate, parents who complete 10 two-hour sessions are awarded a Certified Operator's Card, identical to the one students receive. "Duplicate cards are also posted in the school's Media Center," says Joy, "alongside the Operator Cards of their kids. The parents love it!"

Continued



TURN MOM AND DAD INTO ASSISTANT COACHES

Many other schools are finding that parents can be helpful in their computer classes and labs, too.

Four years ago, Walter Herrala, the principal at South Lyon Elementary School in South Lyon, Michigan, recruited parent volunteers because his school couldn't afford to hire more teachers.

His volunteers work in pairs for one half day each week. Duties include signing each child into the center, following the teacher's instructions for computer-assisted instruction, and managing the machines. Most of the aides take their positions very seriously. They often study their instruction manuals at home. And they check out computers to experiment with during the weekend.

The parents take particular pride in their extensive software knowledge. They know which grade levels each program serves, as well as what information it contains.

You can use parents at your school, too. Here are some helpful hints from Walter for administering your volunteer program:

1. When parents come in for training, put them on the keyboards immediately. This quickly eliminates any anxiety toward the computer. Instruct them to push all the keys to dispel any idea that they can damage the machine.
2. Write out instructions and expectations as clearly as possible. Give each volunteer a copy. Discuss:
   - How to power-up computers
   - How to load software
   - The location of manuals
   - How to care for disks and cassettes
   - What teachers expect software to accomplish
   - How students should behave during lab time
   - Clean up procedures
   - Other rules (no eating or smoking)
3. If possible, pair experienced computer users or past volunteers with new aides.
4. Create a substitute list. Ask aides to call their own subs if they are unable to attend.
5. Ask one aide to clean all computer units each week.
6. Meet with volunteers at least once every six weeks for in-service training and encouragement. Give them a chance to talk about problems and offer suggestions.
7. Find ways to thank parents. Have kids thank them each personally in a class letter. Or present each volunteer with a certificate of merit. Another way to express your gratitude is to try and publicize their accomplishments in a local newspaper.

Your school's computer program can benefit from parent involvement, too. Putting parents on your team may mean more funds for computer equipment. It may mean more resources, too. Informed parents could use their influence to provide services for the class. For example, parents at Meadowlake School, who worked for a local computer company, arranged guest lectures, video tapes, and tours of the computer facility for the students.

When parents understand what you are doing in class, they will appreciate it and encourage their children to excel. What they observe will give them a new respect for teachers. Sometimes their interest results in the purchase of a home computer. Chalk this up on the scoreboard in your team's favor, too. Your students will be more motivated to learn if they have a tool to practice with at home.

Putting parents on your side gives you a leading edge in computer instruction. So muster up some team spirit—and compute . . . compute . . . compute! □

Lesli Rotenberg is editorial assistant for *Teaching and Computers*. Other contributors to this feature include: **Louise Robinson**, assistant professor at Indiana University of Pennsylvania; **Leslie Thyberg**, demonstration teacher and lecturer, and **Sharon Lesgold**, research assistant at the University of Pittsburgh's Learning Research and Development Center.

programmer s

READ THIS...

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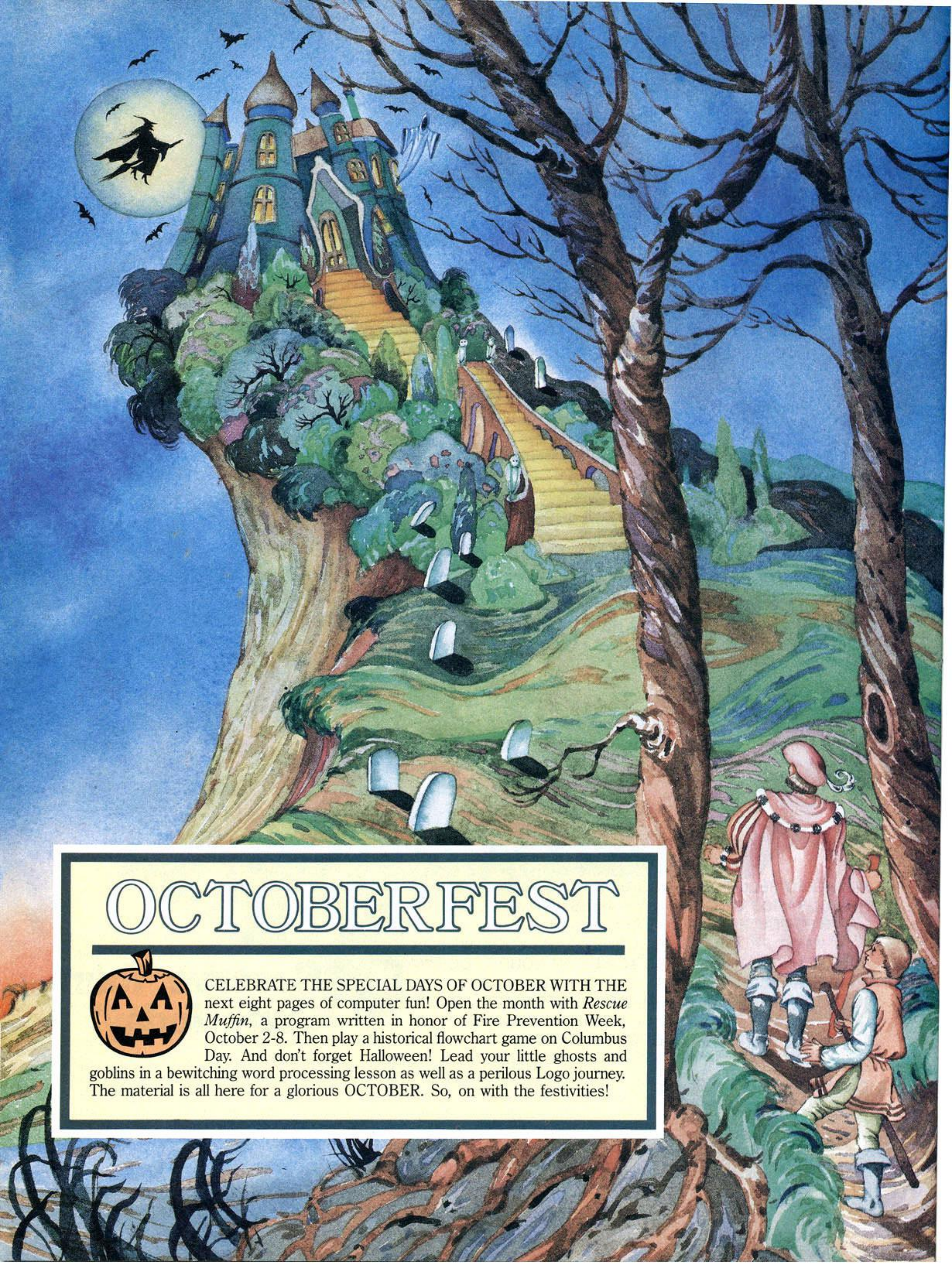
CIRCLE 5 ON READER SERVICE CARD



OCTOBERFEST

CELEBRATE THE SPECIAL DAYS OF OCTOBER WITH THE next eight pages of computer fun! Open the month with *Rescue Muffin,* a program written in honor of Fire Prevention Week, October 2-8. Then play a historical flowchart game on Columbus Day. And don't forget Halloween! Lead your little ghosts and goblins in a bewitching word processing lesson as well as a perilous Logo journey. The material is all here for a glorious OCTOBER. So, on with the festivities!

OCTOBERFEST: *ACTIVITY 1*

Mission Improbable: RESCUE MUFFIN

Challenge students to be heroes in this program, written in honor of Fire Prevention Week: October 2–8

WHO CAN RESCUE muffin, Mrs. Poppenstoppernobbin's snooty kitten, from the blazing fire? Type the *Rescue Muffin* program listing into your computer. Ask students if they can find the reason why the fire started (line 300). What fire safety tips are observed in the program? (Lines 260 and 380)

PROGRAM LISTING FOR *RESCUE MUFFIN*

```
10 CLS
20  PRINT "   YOU'RE PLAYING CARDS AS USUAL WITH FELLOW FIRE FIGHTERS"
30  PRINT "AT THE FLAME-A-WEEK FIRE STATION IN BLAZINGTOWN, USA."
40  PRINT "   BOB SAYS, 'GO FISH,' BUT BEFORE YOU PICK A CARD, THE ALARM"
50  PRINT "GOES OFF.  WHAT DO YOU WANT TO DO?"
60  PRINT "   A) PICK A CARD."
70  PRINT "   B) GET IN THE FIRE TRUCK."
80  PRINT " (TYPE A OR B AND PRESS ENTER.) "
90  INPUT A$
100 CLS
110  IF A$ = "A" THEN  GOTO 2050
120  PRINT "   YOU SEE THE FLAMES AS YOU DRIVE DOWN MAIN STREET."
130  PRINT "YOU:    A) TAKE A SHORT CUT."
140  PRINT "        B) STAY ON MAIN STREET."
150  INPUT B$
160 CLS
170  IF B$ = "A" THEN  GOSUB 1000
180  PRINT "   YOU REACH THE FIRE.  IT LOOKS BAD.  FORTUNATELY, NO ONE"
190  PRINT "IS INSIDE, BUT MRS. POPPENSTOPPERNOBBIN TELLS YOU"
200  PRINT "AND BOB THAT HER KITTEN IS STUCK ON THE ROOF.  YOU:"
210  PRINT "   A) ENTER THE BLAZING HOUSE."
220  PRINT "   B) LET BOB GET THE KITTEN."
230  INPUT C$
240 CLS
250  IF C$ = "B" THEN  GOTO 2030
260  PRINT "   WAIT!  BEFORE YOU GO IN, FEEL THE DOOR.  IS IT HOT (Y/N)?"
270  INPUT D$
280  IF D$ = "Y" THEN  PRINT "   YOU ENTER THE HOUSE THROUGH THE WINDOW."
290  IF D$ = "N" THEN  PRINT " YOU KICK DOWN THE DOOR AND ACT TOUGH."
300  PRINT "YOU TRIP OVER A MASS OF WIRES OVERLOADED INTO A SOCKET, BUT"
310  PRINT "REACH THE STAIRS SAFELY. YOU HEAR A FAINT MEOW OVER THE ROAR"
320  PRINT "OF THE FLAMES. COULD IT BE MUFFIN? YOUR FOOT REALLY"
330  PRINT "HURTS, AND THE SMOKE IS STIFLING.  WHAT SOUNDS GOOD?"
340  PRINT "   A) CONTINUING UP THE STAIRS."
350  PRINT "   B) GOING BACK TO THE STATION TO FINISH YOUR GAME OF FISH."
360  INPUT E$
370  IF E$ = "B" THEN  GOTO 10
380  PRINT "   YOU PUT A HANKY OVER YOUR MOUTH AND LIMP UP THE STAIRS."
390  PRINT "MUFFIN IS LOOKING OVER THE EDGE OF THE ROOF.  YOU CALL HER:"
400  PRINT "HERE, KITTY, KITTY! DOES SHE FEEL LIKE COMING TO YOU (Y/N)?"
410  INPUT F$
420 CLS
430  IF F$ = "Y" THEN  GOTO 2000
440  PRINT "   MUFFIN SMIRKS AND JUMPS TO A NEARBY TREE.  SHE CLIMBS"
450  PRINT "DOWN SAFELY INTO HER MASTER'S ARMS.  YOU ARE THE TOWN HERO."
460   END
1000  PRINT "   YOU SEE A BIG SIGN THAT SAYS:"
1010  PRINT "       *********************"
1020  PRINT "       * SHORT CUT TO FIRE *"
1030  PRINT "       *********************"
1040  PRINT "YOU FOLLOW THE SIGN DOWN INFINITY ROAD.  THE ROAD SEEMS TO"
1050  PRINT "GO ON FOREVER AND EVER. (PRESS ENTER TO CONTINUE.)"
1060  INPUT X$
1070 CLS
1080  PRINT "   YOU DON'T KNOW WHICH WAY TO GO. YOU SPOT ANOTHER SIGN:"
1090  PRINT "       *********************"
1100  PRINT "       * THIS WAY TO FIRE! *"
1110  PRINT "       *********************"
1120  PRINT "   REMEMBERING THE FIRST SIGN, YOU GO THE OPPOSITE WAY AND"
1130  RETURN
2000  PRINT "MUFFIN JUMPS INTO YOUR ARMS AND RIPS YOUR SHIRT TO SHREDS."
2010  PRINT "YOU PRY HER OFF AND RUN FOR THE LAWN.  THE HOUSE COLLAPSES."
2020  PRINT "   BOB TAKES MUFFIN FROM YOUR ARMS."
2030  PRINT "A MOMENT LATER, MRS. POPPENSTOPPERNOBBIN SEES THAT MUFFIN"
2040  PRINT "IS OK AND GIVES BOB $1,000,000,000,000,000 AS A REWARD."
2050  PRINT "YOU LOSE.  DO YOU STILL WANT TO PLAY CARDS WITH BOB (Y/N)?"
2060  INPUT G$
2070  IF G$ = "Y" THEN  GOTO 10
2080  END
```

(Note: This program is written for the TRS-80 Models I and III. Modifications needed for other computers to run the program are the same as those listed in the program modifications box for Program of the Month on page 47.)

AHOY, COLUMBUS

BEGIN

IT'S A BOY! Christopher Columbus is born in Genoa, Italy in 1451. MOVE AHEAD 1.

1

Flip a coin.
Did you
flip
heads?

NO

YES

HOP ABOARD! As a boy, Chris learns to sail by hitching rides on small trading boats.

SAILING, SAILING. When he is 25, Columbus sails for England. MOVE AHEAD 1.

2

Flip a coin.
Did you
flip
tails?

NO

KNIT ONE, PURL TWO. As a young boy, Chris works in the family wool weaving business.

COLUMBUS BROTHERS, INC. As a young man, he and his brother open a map store in Portugal. MOVE AHEAD 2.

ATTACK! The ship sinks under attack. But Columbus floats back to shore on an oar. LOSE A TURN.

YES

4

Flip a coin.
Did you
flip
tails?

NO

A SECOND CHANCE. A monk arranges a second meeting with the queen. No, again. LOSE A TURN.

SHIPS AHOY! In 1492, Queen Isabella gives Columbus the Niña, the Pinta, and the Santa Maria.

COLUMBUS SAILS THE OCEAN BLUE. Trying to find a shortcut to the East, Columbus heads west in 1492.

A COLUMBUS DAY FLOWCHART GAME

Become a swashbuckling sea captain as you sail with Columbus to a new land. HERE'S HOW TO PLAY.

No. of Players: 1 or 2

What You Need: A marker, such as an eraser, for each player. You also need a coin, such as a dime.

Getting Started: Each player puts his or her marker on START. Flip a coin to see who goes first.

Sailing the High Seas: Take turns moving one place at a time. If you land on a green rectangle, you must do what the directions say immediately.

A DREAM COME TRUE? Columbus dreams of sailing to China and India.

A HAPPY COUPLE! In 1479, Columbus marries Donna Felipa Perestrello.

ANOTHER BOY! Christopher and Donna Felipa name their first son Diego. MOVE AHEAD 2.

ALL YOU NEED IS MONEY! In 1482, Columbus asks King John II of Portugal for money to sail to the Orient.

3

Flip a coin. Did you flip heads?

NO

YES

PRETTY PLEASE? Six years, later, Columbus asks Queen Isabella of Spain to lend a hand. MOVE AHEAD 1.

NO WAY! The king thinks Columbus is crazy and refuses to help him.

LAND HO! The crew sights land on October 12, 1492. They go ashore on the West Indies.

MUTINY! After three weeks some members plot to mutiny. HELP! LOSE A TURN.

5

Flip a coin. Did you flip heads?

NO

YES

END

OCTOBERFEST: *ACTIVITY 3*

BEULAH'S BREW

A Word Processing Activity

By Thomas Boudrot

TOIL AND TROUBLE, boil and bubble.... Beulah the witch has cooked up a great recipe for hungry young writers! Using any word processing software and the activity cards on the next page, students can practice deleting, inserting, and replacing words in Beulah's recipe, and even create their own recipes modeled after Beulah's Brew!

Prerequisites: Students must be familiar with the word processing program you are using. They must be able to load and save text; delete, insert, and replace text; create a text file; and understand the term "syntax."

Materials: Any word processing software and a computer system, student activity cards (next page), and a disk or cassette for storage.

Teacher Preparation:

1. Using your word processing program and a file disk or cassette, type in the Recipe for Beulah's Brew exactly as it appears on this page, including capital letters, line spacing, and indentions. Save the text under the filename RECIPE.
2. Cut out the three student activity cards on the next page and laminate them.
3. Have a student load RECIPE into the computer.
4. Give each child a disk or cassette and show kids how to store their work on it.
5. Tell students to complete the cards in numerical order.

Thomas Boudrot is the coordinator of computer instruction in the Alief Independent School District in Alief, TX.

Illustrations by Jurg Orbrist

Recipe for Beulah's Brew: Serves Six

INGREDIENTS:

2 cups beetle BOUILLON
½ cup bat CONSOMMÉ
2 whole fresh FLOUNDER
1 tablespoon chilled CHUTNEY
1 quart swamp SYRUP
2 pints toad TRIPE

Directions:

Combine liquids in a large CAULDRON. Heat and stir. When the liquid turns a dark MOLASSES color, remove from heat. Add remaining ingredients. GARNISH with pumpkin seeds. Serve hot.

Beulah's Brew: Word Processing Card #1

WRITE A BEWITCHING WORD LIST

Beulah isn't your typical cook! She uses odd ingredients in all her recipes. Find out what those ingredients are in this Recipe for Beulah's Brew. Here's what to do.

1. Find all the CAPITALIZED words in her Brew Recipe and write them on a sheet of paper. Look up each word in the dictionary to find a brief definition.
2. Using your own word processing software, type the list of words and their definitions into the computer.
3. SAVE the word list under your own name and PRINT a copy for yourself.

Beulah's Brew: Word Processing Card #2

FIND SUBSTITUTES FOR SOME INGREDIENTS

Translate Beulah's recipe into plain old words! Just follow these steps.

1. REPLACE all capitalized words with a simple word or phrase that means the same thing.
2. SAVE the new recipe under your name and PRINT a copy for yourself.

Beulah's Brew: Word Processing Card #3

CREATE YOUR OWN SPELLBINDING RECIPE

Cooking isn't just for kooks like Beulah! You can be a kook, we mean cook, too.

Create a recipe on the word processing program for Fang-tastic Frog Legs, Spine Tingling Soup, or another creepy concoction. Be sure to include a list of ingredients and cooking directions.

SAVE and PRINT your new recipe. *Bon apétit!*

OCTOBERFEST: *ACTIVITY 4*

MR. BONES AND THE HAUNTED HOUSE

A LOGO ACTIVITY

By Thomas Boudrot

WHO IS MR. BONES, YOU ASK? He's a scary skeleton who likes to hide in closets, under rugs, behind pictures — anywhere that's dark and creepy in the Logo Haunted House! To find the skeleton, students must direct the Logo turtle through a haunted house, uncovering all of Mr. Bones' usual hiding places as they go. Here's how to set up the activity.

PLAYERS: One or two players.

RECOMMENDED FOR: Grades 2–4.

PREREQUISITES: Students must be familiar with the Logo commands FORWARD, BACK, RIGHT, LEFT, PENUP, PENDOWN, and CLEARSCREEN, and be able to estimate distances on the Logo screen.

MATERIALS:

- Logo software and a computer system
- Transparency (See next page.)
- Mr. Bones and six game flaps (See below.)
- Tape or glue
- Scissors

PREPARATION:

1. Make a thermofax transparency of the haunted house on the next page or trace the page onto a blank transparency.

2. Tape the transparency directly on the computer screen, trimming where necessary.

3. Cut out Mr. Bones and the six game flaps on this page. Secretly tape Mr. Bones (the skeleton head) on the back of one of the flaps.

4. Tape the top of each flap to its corresponding spot on the transparency.

5. Boot Logo onto the computer. Pick up the pen (PENUP) and move the turtle to the mouse hole labeled START HERE. Put the pen back down (PENDOWN).

HOW TO PLAY:

1. With two players, one person controls the keyboard while the other lists on paper the commands the "keyboard operator" uses to get from one spot to another. Individual players do both.

2. The student on the keyboard picks a flap behind which he or she thinks Mr. Bones may be hiding. The student then types in commands to move the turtle to the selected flap.

3. The turtle can move only on the floor and stairs. To move the turtle to a window or picture, students must PENUP before giving a forward command so that the turtle "jumps" from the floor to the window.

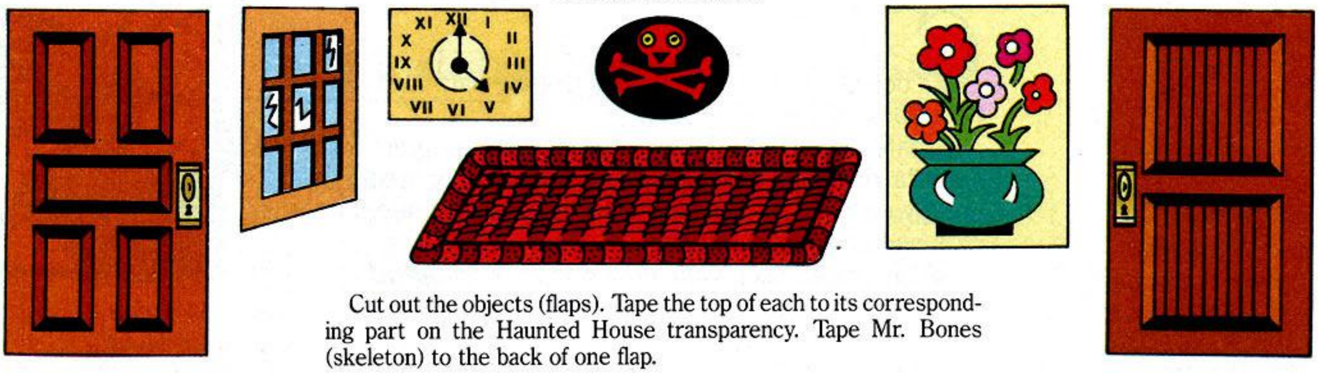
4. Students can lift a flap only when the turtle is totally hidden behind it.

5. When students discover Mr. Bones, they or a partner record the number of opened flaps. Re-hide Mr. Bones for the next student or team of students.

6. Winners are the students who opened the least number of flaps to find Mr. Bones.

7. List the five top winners on a "Survival Board." Include the number of flaps each opened and the list of commands each followed.

***Thomas Boudrot** is the coordinator of computer instruction in the Alief Independent School District in Alief, TX.*

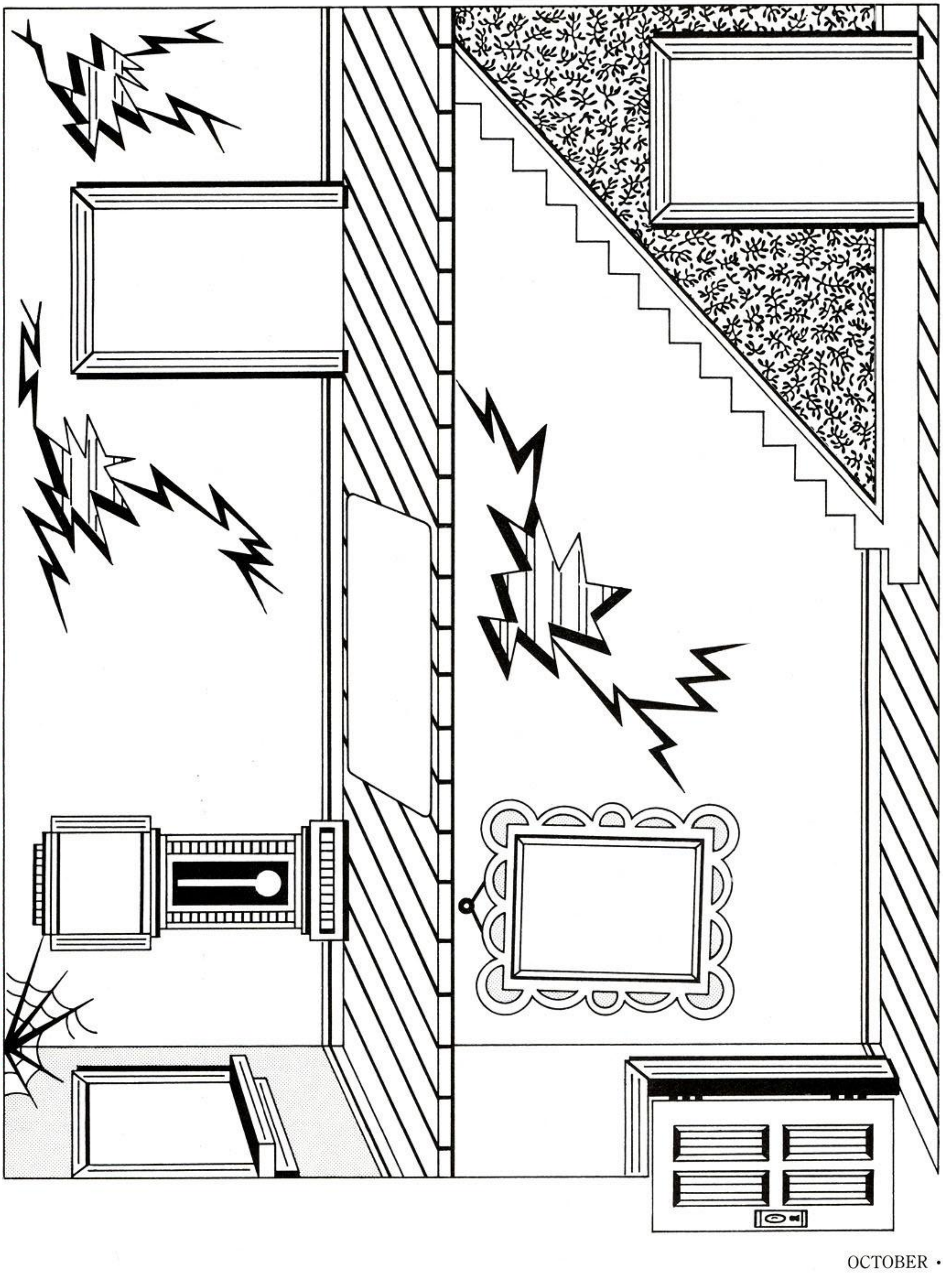


GAME FLAPS

Cut out the objects (flaps). Tape the top of each to its corresponding part on the Haunted House transparency. Tape Mr. Bones (skeleton) to the back of one flap.

Illustrations by Bill Sillbert

MASTER FOR THE HAUNTED HOUSE TRANSPARENCY



HOW TO BE THE COMPUTER'S BOSS: A FIRST LESSON IN PROGRAMMING

EACH MONTH IN THIS COLUMN computer teacher and writer Sandra Markle will give you a programming lesson in BASIC. The first few lessons will cover beginning topics like writing one-liners and debugging simple programs. But by the end of the year, you and your students will know so much about programming in BASIC that you'll be performing Sandra's special, slick programming tricks!

Each column will provide background information on the topic of the month along with a group lesson and six student task cards that you can laminate and place near a computer in your room or lab.

This month, when the power is turned on in your learning center, students will learn how to be the computer's boss. After writing one-line programs, they'll discover that (1) all communications with a computer have to be in code, and (2) that computer instructions have to be very detailed and given in step-by-step order.

SETTING UP

Designate a section of a nearby bulletin board as the "Command Post" where you can display the new command words and symbols that students learn each month. Here are the commands we'll learn in October:

PRINT	Command that makes the computer show answers to number problems.*
RUN	Tells the computer to carry out or execute the program that is stored in its memory.
+	Symbol that makes the computer add.
−	Symbol that makes the computer subtract.
*	Symbol that makes the computer multiply.
/	Symbol that makes the computer divide.

A GROUP LESSON FOR FIRST-TIME PROGRAMMERS

People work with "bucket orders." You can tell persons to draw a circle and they can do it without any other instructions from you. Computers can't handle a bucket order, an order that takes several steps for granted. A computer has to have the job broken down into tasks it can perform one step at a time, and it has to be told in what order to do the tasks. A computer also has to be told just how to respond to any problems that could occur while it's at work.

Ask your students to recall what it was like to try to roller skate or tie their shoes for the first time. How much harder would it have been to learn how to roller skate or tie shoes if they were never shown—only told—how?

People are used to having visual demonstrations of how to do new things. As a computer's boss, your students will need to practice giving detailed orders and presenting them in words only. The words themselves must be part of a language computers can understand. One such language is BASIC. Many of the words in BASIC are just plain English words. But some are different or have very specific meanings. For example, some of the BASIC math signs that the computer uses are different.

- Display the following chart.

Our Signs	BASIC Signs
+	+
−	−
×	*
÷	/
=	=

Have kids write these number sentences using signs the computer will understand.

1. Three times two equals six. (3 * 2 = 6)
2. Four plus five equals nine. (4 + 5 = 9)
3. Eight divided by two equals four. (8/2 = 4)
4. Ten minus nine equals one. (10 − 9 = 1)

- Two important BASIC words to know are PRINT and RUN. The word PRINT can make the computer "print" the answer to number problems that follow it. RUN tells the computer to execute the program stored in its memory. Type (input) the following into the computer: `PRINT 4 + 3`. Now have a student type `RUN`. You'll get an output like RUN 7 or 7 READY. (Computers vary, but all will give you a numerical answer.)
- Display the following chart on the board. Have students match the inputs and outputs correctly.

Input	Output
1. Print 5 / 1	a. 16
2. Print 6 * 8	b. 5
3. Print 2 + 5	c. 7
4. Print 9 + 7	d. 48

(Answers: 1-b, 2-d, 3-c, 4-a)

- If you want to give the computer more than one job to do, each job or line statement, needs to be numbered. That tells the computer what order to do the jobs in. Have a student type the following lines into a computer.

```
10 PRINT 5 − 13
20 PRINT 6 / 2
30 PRINT 9 − 1
```

Now have a child type in RUN. The answers to each problem will appear in the numerical order you gave the computer. Tell students the computer always starts with the lowest line statement number and keeps going higher.

(Continued on page 65)

---

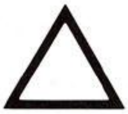
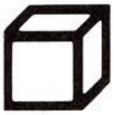
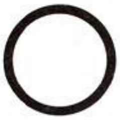
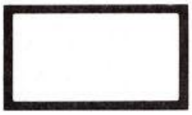
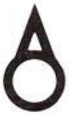
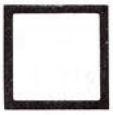
*Note: Other aspects of the PRINT command will be covered next month.

LEARNING CENTER TASK CARD

1

WHAT'S NEXT, BOSS?

Find a partner. Give your partner a piece of graph paper. Choose one of the shapes below, but don't let your partner see your choice. Now, give your partner directions to draw an identical shape on the graph paper. You may not use the words triangle, circle, square, rectangle, or cube when you give your directions.

Does the order in which you give the commands make a difference in the way the shape looks?

LEARNING CENTER TASK CARD

2

# GETTING THE MESSAGE

Some words mean almost the same thing. Does it matter which word you use in a computer message? Here are groups of three math statements. Each statement means the same thing, but which one of each group do you think will actually make the computer do the job? Try them. Which one works correctly? Sometimes when you use a wrong statement, the computer will respond with a message like: SYNTAX ERROR or ?SN ERROR.

Remember to press ENTER or RETURN after you type in each line statement.

A. ADD 2 to 3
B. 2 + 3
C. PRINT 2 + 3

A. PRINT 17 + 22
B. TAKE 17 and ADD IT TO 22
C. 17 + 22 IS

A. PRINT 72/8
B. PRINT 72 DIVIDED BY 8
C. Seventy-two/8

A. SHOW 7 * 7
B. DISPLAY 7 × 7
C. PRINT 7 * 7

LEARNING CENTER TASK CARD

3

SPELLING BEE

PRINT is one of the most useful commands. It can make the computer "print" the answer to number problems that follow it. If you misspell this word, your teacher might still know what you mean. But the computer won't. Try giving the computer each of these commands.

Remember to press ENTER or RETURN after you type in each line statement. If the computer doesn't understand, it will respond: SYNTAX ERROR or ?SN ERROR. If it does understand, it will respond with the answer to 8+8.

```
1. PRINT 8+8
2. PRONT 8+8
3. RPINT 8+8
4. TNIRP 8+8
5. PRUNT 8+8
6. PRIN 8+8
```

LEARNING CENTER TASK CARD

4

COMPUTERS NEED ORDER

A command word like PRINT plus spaces and other instructions or information is called a line statement. The order in which the parts of a line statement are arranged is important. Here's a example.

PRINT		2+2
The command word comes first to tell the computer what kind of job it will be doing.	The space signals the computer to get ready.	This is the job to be done.

After a line statement is made, you press ENTER or RETURN. That signals the computer that the line statement is complete and to go ahead and follow the orders.

Use all or some of the following instructions and variables to make your own line statements. Don't forget to make the spaces. Type in each statement and press the ENTER or RETURN key. If you wrote your line statements correctly, the computer will do each of the jobs you ordered.

```
PRINT + 2 3 9 / − 7 *
```

LEARNING CENTER TASK CARD

5

FIND THE MYSTERY NUMBER

How many seconds does it take the average computer to count from 1 to 2000? Follow these directions to find this "mystery number."

1. Find the numbers to complete the line statements below.

Line #1
(Add the number of days in a week to the number of weeks in a year)

```
PRINT ____ + ____
```

Line #2
(Subtract the year the first person walked on the moon from the year of the next presidential election.)

```
PRINT ____ – ____
```

Line #3
(Multiply all three numbers found in the names of the two famous Star Wars robots.)

```
PRINT ____ * ____ * ____
```

2. Now type each complete line statement into the computer and press RETURN or ENTER.
3. Write a line statement that adds the final answers to the first three line statements and then subtract 84.

```
PRINT____+____+____–84____
```

4. Type the line statement into the computer. Press RETURN or ENTER. You've got the mystery number!

LEARNING CENTER TASK CARD

6

LINE 'EM UP!

If you want to give the computer more than one job to do, each job or line statement needs to be numbered. That tells the computer what order to do the jobs in. Type the following lines into your computer:

```
10 PRINT 4+2
20 PRINT 3+3
30 PRINT 9–7
```

Now type the word RUN. This tells the computer to perform the line statements in order. Press ENTER or RETURN. You should get:

```
RUN
6
6
2
```

What happens if you number the line statements differently? Type in this:

```
20 PRINT 10–5
10 PRINT 5–5
30 PRINT 7+2
```

Now type RUN. Press ENTER or RETURN. What happened? Why?

Computing in the Content Areas

Delta Drawing

AGE LEVEL: 4–14 years.
PURPOSE: To introduce children to programming by using the computer as a drawing tool.
CURRICULUM AREAS: Computer Programming Readiness; Art; Mathematics
HARDWARE AND PERIPHERALS: Apple II, Apple II Plus, or Apple IIe; Atari 400/800; IBM Personal Computer; 48K memory. For Apple, one disk drive and DOS 3.3; disk controller card installed in slot #6. Printer optional. Color monitor preferable.
PUBLISHER: Spinnaker Software Corp.
ADDRESS: 215 First St., Cambridge, MA 02142.
PRICE: $59.95

By Mari Endreweit
and Eleanor R. Kulleseid

Program Description

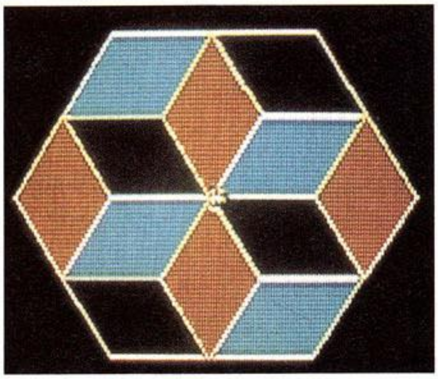
Delta Drawing introduces children to programming concepts by turning the computer into a drawing tool. It can be used with either a black-and-white or color monitor, but color offers many more learning options.

When the program is first loaded, it adjusts to the user's specific computer system by asking a few yes or no questions. The cursor will then appear at the center of the screen signaling that *Delta Drawing* is ready to obey commands. Children enter them by pressing single keys. Pressing D (for draw) makes the cursor move forward in a short, straight line. To lengthen the line, students press D as many times as needed. Pressing R turns the cursor to the right; pressing L turns it left.

These basic commands allow children to make simple forms and patterns. If you have a color monitor, students can select from a menu of six colors to draw colored lines, to fill in shapes, and to add background colors.

Delta Drawing is more than a doodler; it is a "crayon" with a memory. Every command the child enters is recorded in two ways. It is recorded in a visual pattern that appears on the screen as the child develops a picture, and it is recorded in a text mode by displaying on the screen a list of letters and numbers that represent the commands the child has entered. This series of commands is held in the computer's memory and can be stored as both a program and a picture. Either one can be recalled for re-use. If a printer is available, children can get written printouts of their programs.

The program's excellent manual introduces each basic function clearly and in detail. For those who are short of time, there is a useful set of sequenced activity cards, which live up to their name, "Fast Start Cards." They get you into the program and executing functions right away. But keep the manual close by; you will need it soon enough.



Students can fill shapes of their *Delta Drawing* with color.

Using the Program in the Curriculum

Teachers who are responsible for teaching programming, especially to primary grade children, will find *Delta Drawing* can provide an easy introduction. Many teachers might not see any reason to give this program high priority. Those teachers would be missing some interesting opportunities.

Delta Drawing offers a number of possibilities for introducing or practicing mathematics and art design concepts. Following are some examples.

Math Activities

Math topics you can cover with *Delta Drawing* include: fractions, area and perimeter, and geometric shapes.

1. FRACTIONS: *Delta Drawing* particularly lends itself to practicing halves because when you press CONTROL along with another key—for example, CTRL-D—you get a line that is only half as big as the line you would get by pressing the letter key without CTRL. However, there are many other ways to use the capacities of the program to explore fractional parts. Here are some examples:

- My box is a square shape, with each side six Ds long. Make my box. Inside my box make another box that is half as big as mine. Fill it with color.
- Make your own square shaped box.

Make its sides half as long as the sides of mine. Remember, mine were six Ds long. How many of your boxes would fit into my box? (4) Make a *Delta Drawing* that shows it.

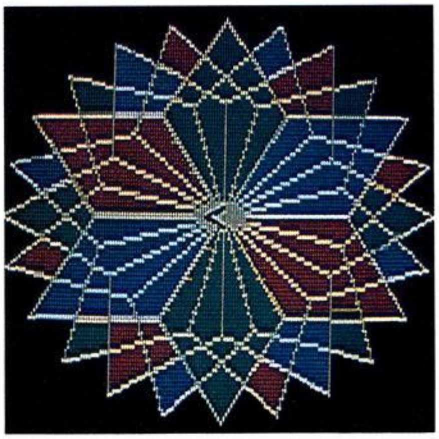
- Draw a rectangle. Make the long side by pressing D eight times. Make the short side half the length of the long one.
- Draw a square. Use different colored lines to show two ways of cutting it into halves. (Diagonally and horizontally) Can you think of any others ways to do it? If you can, draw your own square and half it.
- CTRL-R turns the cursor half as far as R. How many CTRL-Rs will turn the cursor as far as two Rs? (4)

2. AREA AND PERIMETER: Formal instruction in area and perimeter is usually part of upper elementary math curricula. However, with *Delta Drawing,* younger as well as older children can explore these ideas. Some examples:

- Put the cursor in the upper left-hand corner of the screen, as far as it will go without disappearing. Now use the D key to measure the distance all around the edge of the screen. How many Ds does it take for the cursor to travel all around the edge of the screen and get back to its starting place?
- Draw a triangle with each side the same D length. How many Ds is it all the way around?
- Make a big box, each side of which is eight Ds long. How many little boxes with sides two Ds long can you fit inside the big box? (16) Fill each little box with a different color.
- Draw the same big box again. Now try to fit little rectangles into it. They can be any size, as long as they all fit inside the big box and use all the space. How many rectangles did you make? Fill each one with a color.

3. GEOMETRIC SHAPES: Elementary school students don't often explore shapes beyond the square, the rectangle, the triangle, and the circle. *Delta Drawing* can be used to help open up the world of geometric shapes to them. Here are some sample activities:

- Can you make a shape with eight (6, 5, 12, and so on) straight sides all the same length? What if you use sides of different lengths? Does that change the shape? (Yes)
- Use Pattern blocks to make an interesting geometric design. Then try to copy it using *Delta Drawing.* Can you make a program for each different element in your design? Put these programs together to make the whole design, just as you put the blocks together. Save your shape programs to use again.
- Make a new, interesting geometric figure on the screen, using your shape programs. If you have a printer, print it out. Now copy it using your pattern blocks and record the block pattern on a sheet of paper with crayons or markers. Compare this copy with the printout. Did you copy accurately?



This *Delta Drawing* shows how students can repeat and fill in shapes.

Art Activities

Delta Drawing's color graphics capability makes it a natural for using in an elementary art curriculum. It is particularly suitable for middle and upper graders who have had extensive experience with free-hand drawing and mixing colors and who are ready to explore more complex elements of composition —the manipulation of various shapes and colors into visual patterns.

Even first and second graders can be helped though to make comparisons between the shapes and patterns found in the natural world with those they create using paper and paints or crayons, clay, wood, or the electronic paintbox provided by *Delta Drawing.*

Following are a few ways to use *Delta Drawing* for art instruction.

- Make a *Delta Drawing* using a given number of shapes and colors. Imitating the composition of your *Delta Drawing,* make a collage, using colored papers of various kinds.
- Working from the same drawing, make solid cardboard shapes that have surfaces the same shapes as the elements of your design. Try to put them together in a construction that from one viewpoint, looks like your *Delta Drawing* pattern. What does it look like from other viewpoints? Could you make another *Delta Drawing* that looks like another view of your three-dimensional construction?
- Look for patterns found in the natural world. Take a close look at a leaf, a flower, a feather, and observe the interesting designs they make. Look at the pattern of lines in your own or a friend's hand. Make a *Delta Drawing* program for any of these natural patterns, and of others that you discover.
- Imagine you are a fly on the ceiling of your bedroom. Make a diagram of the room as the fly would see it.
- Use *Delta Drawing* to make programs for basic patterns that you can use in making a quilt, a rug, or a pillow.
- First graders could use *Delta Drawing* to make plans for a miniature city. After making field trips to study the community, have each child design a specific town building, using block shape programs they have written with *Delta Drawing.* Using printouts of their programs as a guide, students should then construct a *Delta Drawing* of an entire city.

Related Programs

1. *Color Logo*; TRS-80 Color Computer (32K with disk drive or 16K ROM-based). Radio Shack/Tandy Corp., 1800 One Tandy Center, Fort Worth, TX 76102.
2. *Cyberlogo Turtle*; Apple II disk, Cybertronics International, 999 Mt. Kemble Ave., Morristown, NJ 07960.
3. *Turtle Tracks* (formerly *Kidstuff*); VIC-20, Commodore 64, Atari 400/800, Apple II, TI-99/4A disk. Scholastic Inc., 730 Broadway, New York, NY 10003.

Other Related Materials

1. Di Valentin, Maria and Louis. PRACTICAL ENCYCLOPEDIA OF CRAFTS. New York: Sterling, 1973.
2. Schepp, Steven R., ed. THE FAMILY CREATIVE WORKSHOP (two vols.). New York: Plenary Publications, 1976.
3. PATTERN BLOCKS (actual blocks). Palo Alto, CA: Creative Publications.

Mari Endreweit is director of faculty in-service computer education, Bank Street College of Education, New York City. *Eleanor R. Kulleseid* is director of library services, Bank Street College of Education, New York City. ☐

AROUND THE WORLD

Koda-Callan

WITH PHILEAS FOGG

In this month's program, students can join Phileas Fogg on his voyage around the world and learn about the continents en route!

BY JOAN COOPER

AROUND THE WORLD borrows from the Jules Verne tale *Around the World in 80 Days* to test students' knowledge of the continents. Students join the main character, Phileas Fogg, in his hot air balloon as he travels from continent to continent. Phileas points out features, such as mountains or countries on each continent, and students must guess the name of the continent he's traveling over in three tries or less.

Following is a teaching guide to the program. The first part, Using the Program in the Curriculum, suggests ways you can use *Around the World* for social studies, language arts, math, and science instruction. The second part, A Programming Lesson, offers tips for those of you who want to use *Around the World* as part of a programming lesson.

USING THE PROGRAM IN THE CURRICULUM

Students can do these activities before, during, and after using *Around the World.*

Social Studies: • Post a map of the world near the computer. Make sure students can identify continents by name and shape and can spell them correctly. • Assign one continent per team of students for a presentation on the history, geography, and cultures of that continent. • As a class, use a map of the world to chart Phileas' course in *Around the World,* including all points mentioned in the program. • Divide the class into several groups. Again using a map of the world, have each group chart a course around the world that goes one third by water, one third by land, and one third by air. As a class, compare courses and decide which one is best.

Language Arts: • Have students pretend they're Phileas Fogg and write a journal of their adventures. • Suppose Phileas visits the class on his journey. How would students describe their town, state, country, and continent to him? Have them write down their descriptions.

(Continued)

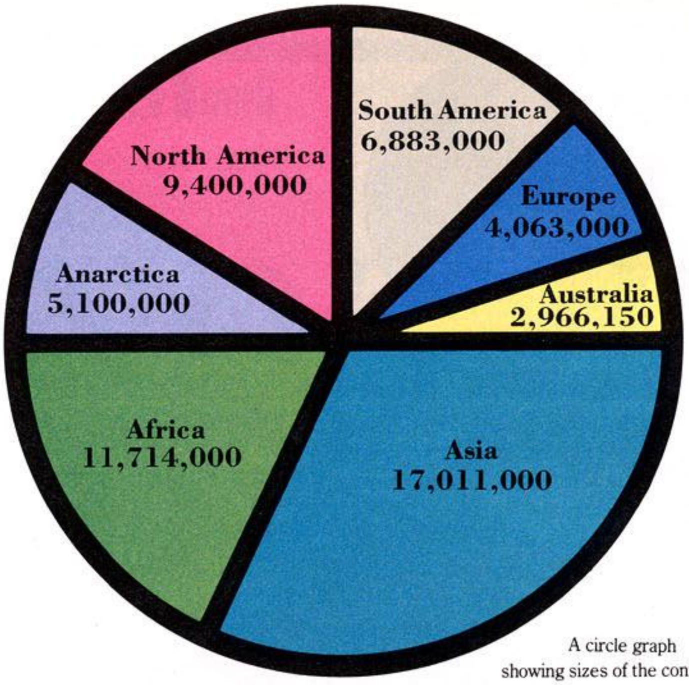
PROGRAM LISTING FOR "AROUND THE WORLD"

```
5 C = 0
10  PRINT "   PHILEAS FOGG BET HE COULD GO AROUND THE WORLD IN 80 DAYS!"
20  PRINT "WHY NOT JOIN HIM IN HIS HOT AIR BALLOON?  HE'LL TELL YOU WHAT H
     E"
30  PRINT "SEES ON HIS TRAVELS AND YOU HELP HIM NAME THE CONTINENT'YOU'RE"

40  PRINT "PASSING OVER.  REMEMBER TO SPELL THE CONTINENT CORRECTLY! (PRES
     S"
50  PRINT "ENTER TO CONTINUE.)
60  INPUT S$
70 CLS
80  READ N$,X$,Y$,Z$
90  IF N$ = "END" THEN 610
100  PRINT X$: PRINT
110  PRINT "WHERE ARE WE?"
120  INPUT A$
130  IF A$ = N$ THEN 260
140  PRINT "THAT'S NOT IT.  HERE'S ANOTHER CLUE:": PRINT
150  PRINT Y$: PRINT
160  PRINT "WHERE ARE WE?"
170  INPUT A$
180  IF A$ = N$ THEN 260
190  PRINT "THAT DOESN'T SEEM RIGHT.  HERE'S ONE MORE CLUE:": PRINT
200  PRINT Z$: PRINT
210  PRINT "WHERE ARE WE?"
220  INPUT A$
230  IF A$ = N$ THEN 260
240  PRINT "LOOK! I SEE A SIGN THAT SAYS WE'RE ON ";N$;"!"
250  GOTO 280
260  PRINT "THAT'S IT!!!": PRINT
270 C = C + 1
280  PRINT "NOW WE'LL MOVE ON TO THE NEXT CONTINENT!": PRINT
290  PRINT "(PRESS ENTER TO CONTINUE.)"
300  INPUT S$
310  GOTO 70
320  DATA  "EUROPE"
330  DATA  "MY HOME COUNTRY OF ENGLAND IS ON THIS CONTINENT."
340  DATA  "THE COUNTRIES ARE SMALL.  BUT THE ALPS ARE SO BIG!"
350  DATA  "I CAN SEE THE LARGEST CONTINENT OFF TO THE EAST!"
360  DATA  "AFRICA"
370  DATA  "LOOK AT THOSE PEOPLE CANOEING DOWN THE NILE RIVER!"
380  DATA  "I SEE A VAST DESERT IN THE NORTH AND JUNGLE IN THE SOUTH!"
390  DATA  "I SEE A SIGN FOR EGYPT!"
400  DATA  "ASIA"
410  DATA  "A SIGN POINTS THE WAY TO MONGOLIA."
420  DATA  "WE'LL FLY OVER THE HIGHEST MOUNTAIN IN THE WORLD!"
430  DATA  "THIS CONTINENT GOES ON FOREVER!  I'M SURE IT'S THE LARGEST!"
440  DATA  "AUSTRALIA"
450  DATA  "WHAT WEIRD CREATURES!  KOALA BEARS AND KANGAROOS!"
460  DATA  "ABORIGINES WERE THE FIRST TO SETTLE HERE."
470  DATA  "THIS HAS TO BE THE SMALLEST CONTINENT!"
480  DATA  "ANTARCTICA"
490  DATA  "BRRR!  IT'S FREEZING DOWN HERE!"
500  DATA  "WE'RE ON THE BOTTOM OF THE EARTH!"
510  DATA  "LOOK! THERE'S THE SOUTH POLE!"
520  DATA  "SOUTH AMERICA"
530  DATA  "THE ANDES MOUNTAINS LOOK BEAUTIFUL DOWN THERE!"
540  DATA  "THE AMAZON RIVER HAS TO BE THE WIDEST IN THE WORLD!"
550  DATA  "WE'RE SOUTH OF THE EQUATOR."
560  DATA  "NORTH AMERICA"
570  DATA  "THERE'S GREENLAND TO THE EAST!"
580  DATA  "THIS CONTINENT STRETCHES ALL THE WAY TO THE NORTH POLE!"
590  DATA  "LOOK HOW TALL AND WIDE THE ROCKY MOUNTAINS ARE!"
600  DATA  "END","END","END","END"
610 CLS
620  PRINT "PHILEAS MADE IT WITH ONE SECOND TO SPARE! THANKS FOR YOUR HELP
     !"
630  PRINT "BY THE WAY, YOU HAD ";C;" OUT OF SEVEN CORRECT!"
640  END
```

NOTE: This program is written for Radio Shack computers. For modifications for other machines, see page 38.

Math: ● Have student groups plot courses to other continents using longitude and latitude coordinates. ● Have students gather statistics on square miles, population, and people per square mile for each continent. Organize the information into charts, tables, and graphs. Here's an example.



A circle graph showing sizes of the continents.

Science: ● Have student groups collect data on different continent's terrains and atmospheres and record the data in a notebook. ● Discuss the Continental Drift theory, which proposes that the continents once formed a single body of land and slowly drifted to their present positions.

A PROGRAMMING LESSON

Post this variable chart near the computer.

VARIABLE	FUNCTION
C	Counts the number of correct answers
N$	The name of the continent
X$	Phileas' first clue
Y$	Phileas' second clue
Z$	Phileas' third clue
A$	User's answer
S$	Start the lesson

Around the World uses a series of READ DATA statements. Write this program on the board:

```
10 READ A$, B$, C$, D$
20 DATA "EUROPE"
30 DATA "ENGLAND"
40 DATA "SMALL"
50 DATA "ASIA IN EAST"
60 END
```

Explain that the READ statement contains four variables that act as pigeonholes. The DATA statements contain the information that goes in those pigeonholes. Draw lines from the first variable (A$) to the first DATA statement (EUROPE), from the second variable to the second DATA statement, and so on.

Point out that every DATA statement goes with a variable. Add variables E$ and F$ to line 10. Pick a volunteer to debug the program by adding DATA statements in lines 51 and 52.

Print out a program listing for each student. Point out that there are more data statements than variables (line 80). Ask students to follow the program listing as they run the program to see why.

They should discover that each time the computer loops back to line 70 (see the GOTO commands in line 310), it enters a new set of four DATA statements in the variable pigeonholes. Have students draw lines connecting the variables in line 80 with the DATA statements in lines 320-600.

Make it Better

You can adapt *Around the World* to make quizzes in other curriculum areas. Here's how:

(1) Rewrite the PRINT statements to accommodate your subject.

(2) Substitute seven answers in place of the continent names in the DATA statements (lines 320, 360, 400, 440, 480, 520, and 560).

(3) Replace the three clues following each answer with your own clues.

(4) For more than seven questions, add DATA statements (in groups of four with the answer listed first) before the DATA "END" statement. (Note: Don't use commas or colons in DATA statements.)

PROGRAM MODIFICATIONS

The program listing is for the TRS-80 Models I/III and Radio Shack Color Computer. This chart lists modifications for others.

MACHINE	LINES 60, 600	LINES 40, 280
Apple	HOME	PRINT "PRESS RETURN . . .
Atari	PRINT "(Press ESC once, then press CTRL and CLEAR at the same time.)" You should get an arrow pointing up and to the left.	PRINT "PRESS RETURN . . .
Commodore 64 **PET** **VIC-20**	PRINT "(Press the SHIFT key and CLEAR key at the same time.)" You should get a heart.	PRINT "PRESS RETURN . . .
TI 99/4A	CALL CLEAR	

Joan Cooper is a fourth grade teacher at Ocean Township Elementary School in Oakhurst, NJ.

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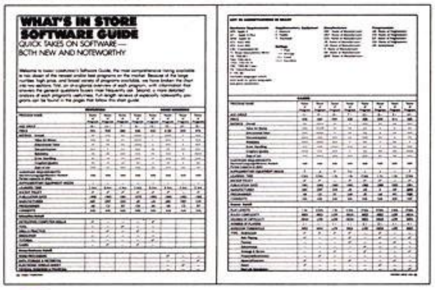

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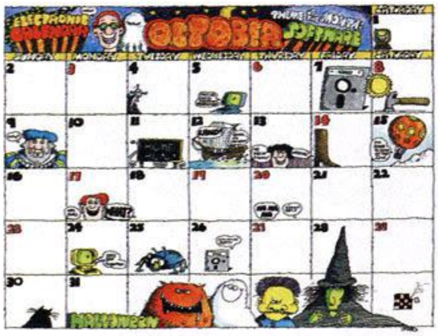
CIRCLE 4 ON READER SERVICE CARD

Electronic Calendar - Teacher's Guide

COMPUTING IN OCTOBER



by Lorraine Hopping

THE OCTOBER ELECTRONIC Calendar introduces students to software. Part one of the teacher's guide, arranged in topical order, offers explanations and answers for calendar items related to this software theme.

Part two explains holiday-related items.

Part 1:

SOFTWARE ACTIVITIES

TOPIC: What is Software?

Corresponding Calendar Dates: 10/3, 10/6

Computer software contains instructions that make a computer work. A computer without software is like a projector without film; it simply doesn't work. List things students think software programs can tell a computer to do. (Suggestions: play chess, print a poem on the printer, draw pictures, make multiplication problems, and play a tune.) Make a separate list of things students think a software program **can't** tell a computer to do. (Suggestions: eat and drink, hate homework, and play real baseball.)

Compare computer software and other types of software, such as filmstrips, movies, and videotapes. All software needs hardware to work and vice versa. But computer software instructs the hardware to do something, while other software does not. (A film's contents do not affect how the projector works, but the contents of a software program **determine** how a computer works.)

TOPIC: Software Care

Corresponding Calendar Dates: 10/8, 10/14

Show students the poster on the reverse side of the calendar and review the do's and don'ts of disk care. If you have a ruined disk, use it to show that floppy disks are flexible, but fragile.

Ask students what happens if they take a record off a record player while it's playing. Explain that the same thing happens when you touch a disk in a disk drive in operation.

TOPIC: Following Instructions

Corresponding Calendar Date: 10/17

The I-Command-You game helps students follow instructions precisely, a useful skill for both using and writing software programs. Here's how to play:

Make a list of 20 instructions preceded by "I command you to . . . . " For example, I command you to: write your name three times; stand up and recite a poem; add 13 and 27; think of a name for the classroom computer . . . . Also include commands like: if you have brown hair, skip the next instruction; read, but don't follow, the rest of the instructions; and when I command you to say something, write it instead.

Divide the class into Team A and Team B. Each member of Team A picks a member of Team B as a partner. While the Team A members follow the list of instructions, their Team B partners watch for and record mistakes. When everyone is done, partners switch places. The team with the least mistakes wins.

TOPIC: Types of Software

Corresponding Calendar Dates: 10/19, 10/20, 10/23, 10/27

Software can provide simulations, tutorial programs, and drill and practice lessons. It can also turn your computer into a word processor, a database, or other office tools.

Some existing simulation programs imitate a lemonade stand, the flight of an airplane, a volcano erupting, and even a journey through the human body via a miniature submarine! Let students' imaginations go to work thinking of other simulations.

To introduce word or data processing, explain that a computer carrying out instructions changes data in some way. In other words, it **processes** it. A word processor accepts words from a human and then processes those words into a written text. A database processes information by arranging it in files, alphabetizing it, calling up parts of it on the screen, and so on.

The Database Treasure Hunt teaches students about various kinds of databases and what types of information they contain. List 20 questions that can be answered by accessing databases. Examples: When is the next flight from New York to Paris? Who is the author of *Alice in Wonderland*? What is the address of a classmate? What is your medical history?

On separate sheets of paper, list the answers (flight 101 from New York to Paris, at noon) and where that answer can be found (travel agency, airport). Designate desks to represent government offices, a travel agency, an airport, a school office, a library, and so on in the classroom and put the answer sheets at the appropriate places.

Students must locate answers to all the questions by accessing the correct "database." The first one done wins!

TOPIC: Computer Languages

Corresponding Calendar Date: 10/29

Explain that instructions on a software program are written in a code that both computers and humans can understand. There are many codes or languages. Some examples are: BASIC, Logo, and Pilot.

Part 2:

HOLIDAY-RELATED ACTIVITIES

October 9: The order is: 2, 4, 1, 3.

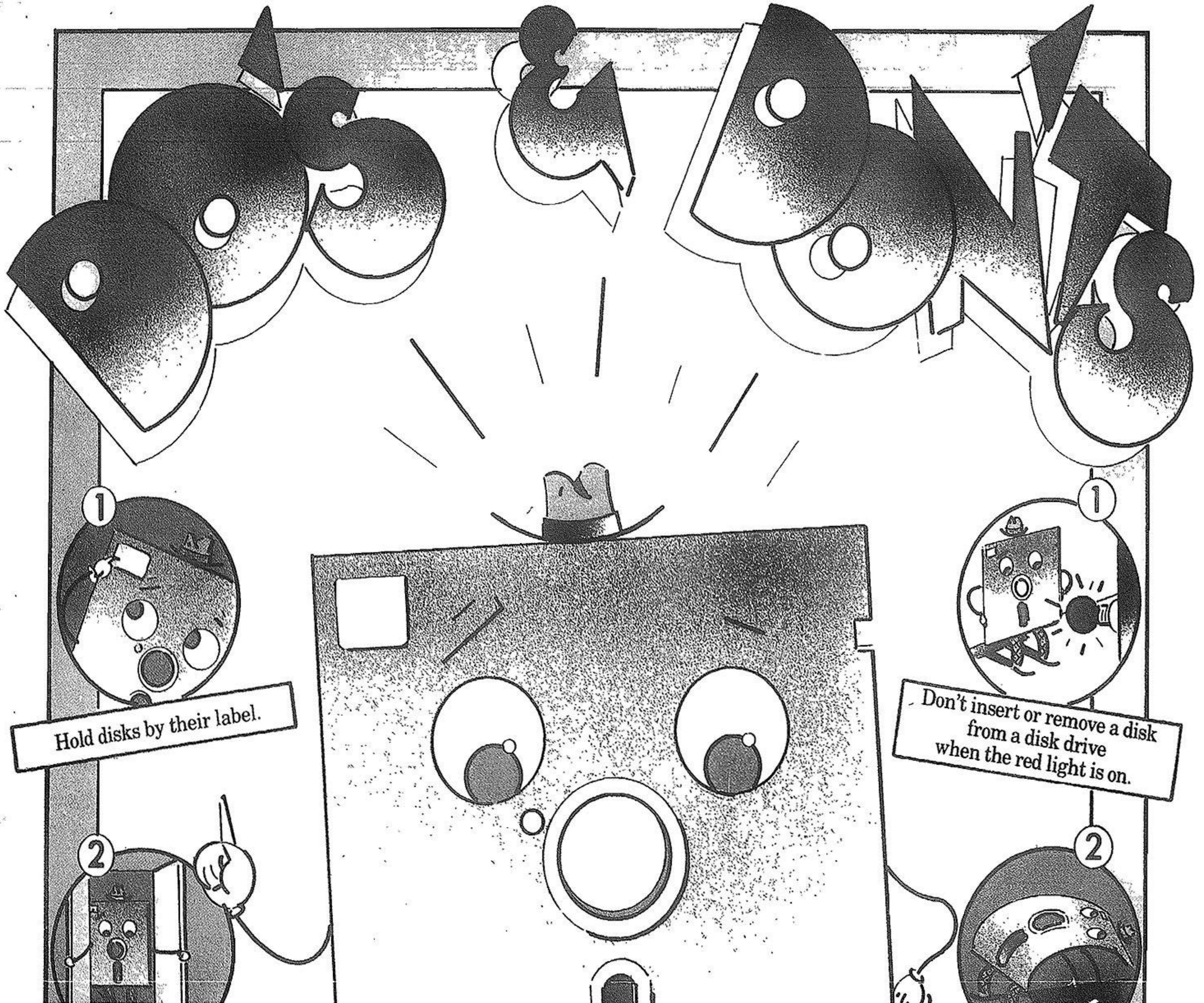
October 11: In the World Series, computers can: 1) Figure out batting averages. 2) Determine ticket prices. 3) Compare current players and past players. 4) Help sports writers cover the series and report game results. 5) Run the message boards at the stadium.

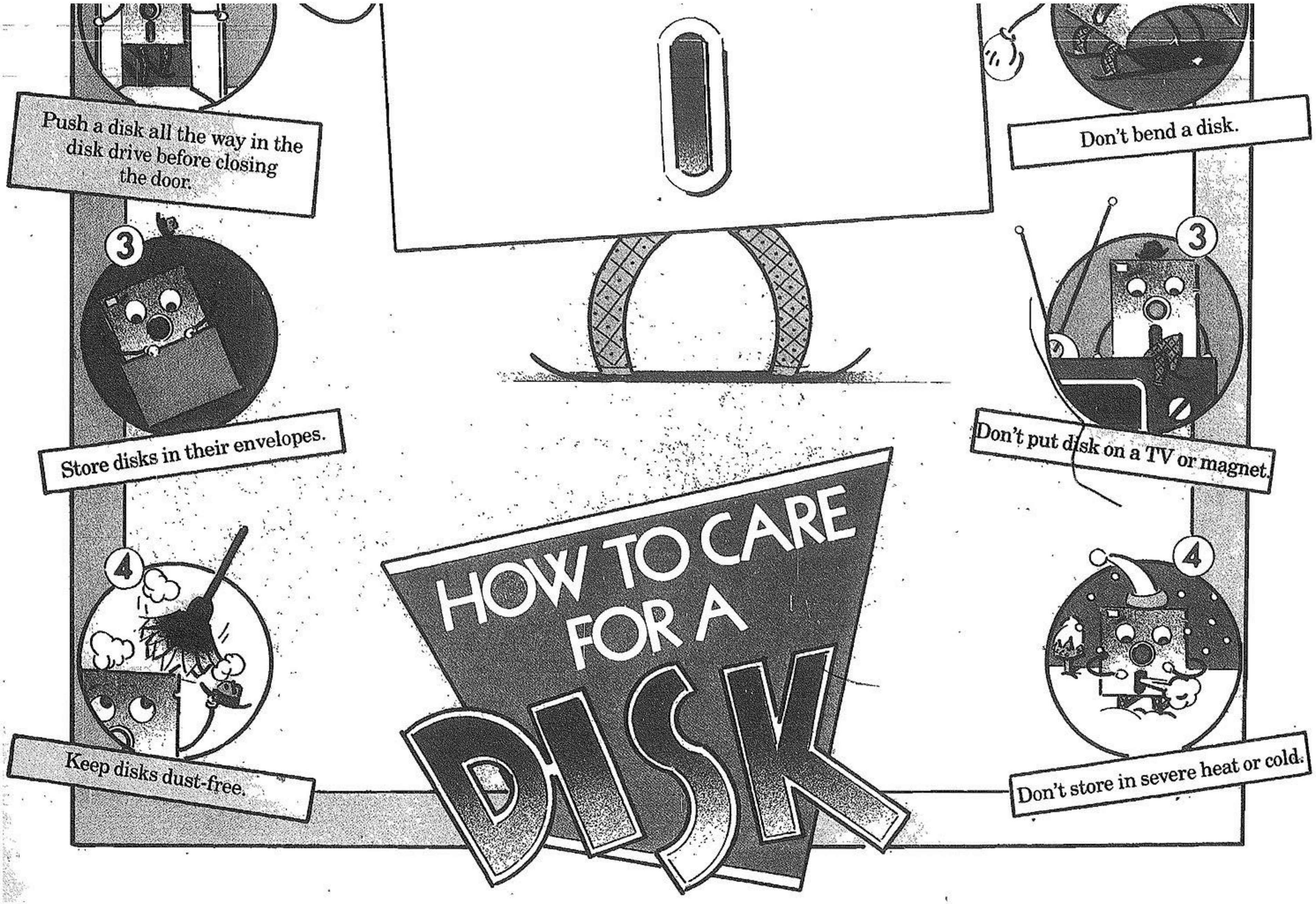
October 22:

```
10 FOR P = 1 to 3000
20 PRINT "PARACHUTE"
30 NEXT P
40 END
```

☐

Calendar pages 41-42 missing


DO'S & DON'TS
1
Hold disks by their label.
2
1
Don't insert or remove a disk from a disk drive when the red light is on.
2



HOW TO CARE FOR A DISK

Push a disk all the way in the disk drive before closing the door.

Store disks in their envelopes.

Keep disks dust-free.

Don't bend a disk.

Don't put disk on a TV or magnet.

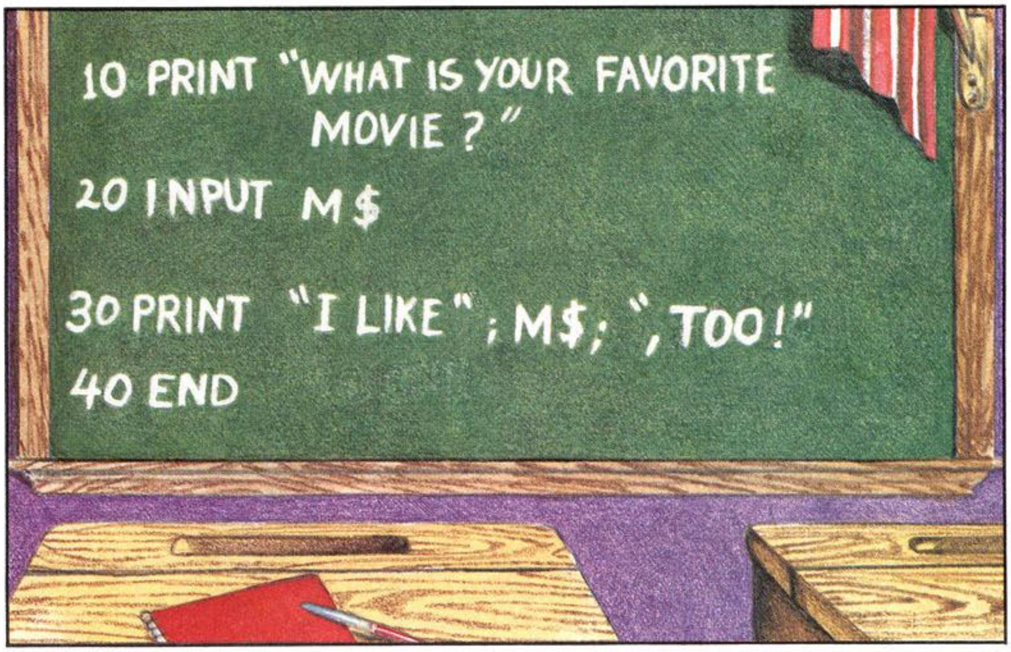
Don't store in severe heat or cold.

Micro Ideas

GO ONE BETTER WITH YOUR PROGRAMS

Once a week I write a simple three-to five-line program on the chalkboard and challenge kids to go one better. That means they are to take the program and improve on it in any way they can. Students can add a little or a lot, but they must not change the basic goal of the program. It's great fun to run through some of the one-betters with the class!

Jim Alvaro
Detroit, MI



```
10 PRINT "WHAT IS YOUR FAVORITE
          MOVIE ?"
20 INPUT M$
30 PRINT "I LIKE"; M$; ", TOO!"
40 END
```

Write simple programs on the board and challenge kids to extend them.

PLAY COMPUTER BINGO

One of our favorite classroom games is Computer Bingo. It's played very much like regular bingo only the squares on the bingo cards contain computer words, statements, or commands. Instead of calling letters and numbers, I ask a computer question and have the students see if the answer is on their card. A sample question might be, "What's the name of the flashing square that appears on the monitor and marks the next spot where a symbol will appear if a key is pressed on the keyboard?" If students have the word "cursor" on their card, they cover the square with a chip. Play continues until someone's chips cover an entire card. It's a great way to reinforce computer vocabulary!

Veronica Ferrel
Heoldsburg, CA

MARK THE VOLUME DIAL ON YOUR RECORDER

If you use microcomputers that store and recall data with a cassette recorder, then each time you turn it on, you probably spend a few minutes searching for the correct volume setting.

There's a simple solution to this annoying time-waster. Once you find the "correct" setting (usually by trial and error), paint a line of white typewriter correction fluid on the spot where the control dial should be turned each time.

C.E. Field
Narrangansett, RI

DEMILITARIZE BIG TRAK

One of the most popular pre-Logo toys on the market is Big Trak, distributed by Milton Bradley. It's a battery-driven vehicle that students can program to go forward, back, left, or right. My students love to work with Big Trak—and so do I. But I dislike the fact that it's a military vehicle with a built-in laser gun. I've solved this problem by painting my Big Trak a bright red and renaming it Big Truk.

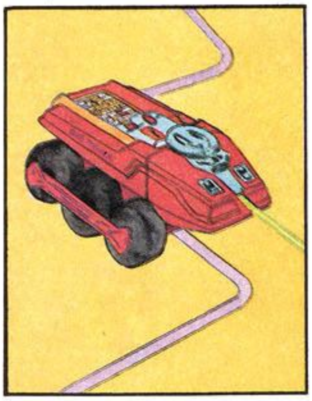
The students love the machine's new identity. They especially like programming Big Truk to follow masking tape streets to the site of a "fire." At the fire, they pretend to extinguish flames with "laser water."

Bonnie Nelson
Roanoke, VA

MAKE YOUR OWN MONITOR STAND

If you can't afford a stand for your monitor, ask the janitor to shorten the legs of an old student desk to about 4". Place the monitor on the desktop and the keyboard below the desk.

Sue Ridgely
Decatur, IL



Big Trak becomes a fire truck when you paint it red.

Continued

PRACTICE GIVING DIRECTIONS

Giving directions to a computer requires students to break down a task into a series of logical steps. Here's an activity that helps children practice this skill.

Give every student a dozen cardboard squares. Then divide kids into pairs (Student A and Student B). Have partners sit at a desk or table with a book or divider between them so that they cannot see each other's squares when placed in front of them.

Student A constructs a design with his or her squares and describes the design, step by step, to Student B. Student B reconstructs the design according to Student A's oral instructions. When Student B is finished, both look to see if the designs are identical. If they are not, the students discuss how to adjust the directions so that they will be. Once the directions are correct, Student A writes them down. Students then reverse roles, with B inventing a design and giving directions, and A following them. Later, A and B should give their written directions to a third student to follow.

Nancy Warner
Boise, ID

MAKE DISK CADDIES

An easy way to organize diskettes is to divide your software into subject groups and make a disk caddy for each group.

To make a caddy, you need an 8″x11″ piece of cardboard. Place a jacket with a disk in it in the top right-hand corner of the cardboard. Tape the bottom of the jacket to the board. Place a second jacket on top of the first, about 2″ lower, and tape the bottom of it to the board. Continue to tape jackets down in this fashion until you fill the board or run out of disks.

When you're done, you can flip through the disk jackets quickly to find the diskette(s) you want. If you decide to display a caddy in an upright position, tape down the top of each jacket as well.

Michael Milone
Honesdale, PA

GIVE LOGO WALL-TO-WALL COVERAGE

If your students are investigating Logo, why not designate a bulletin board on which they can share their discoveries?

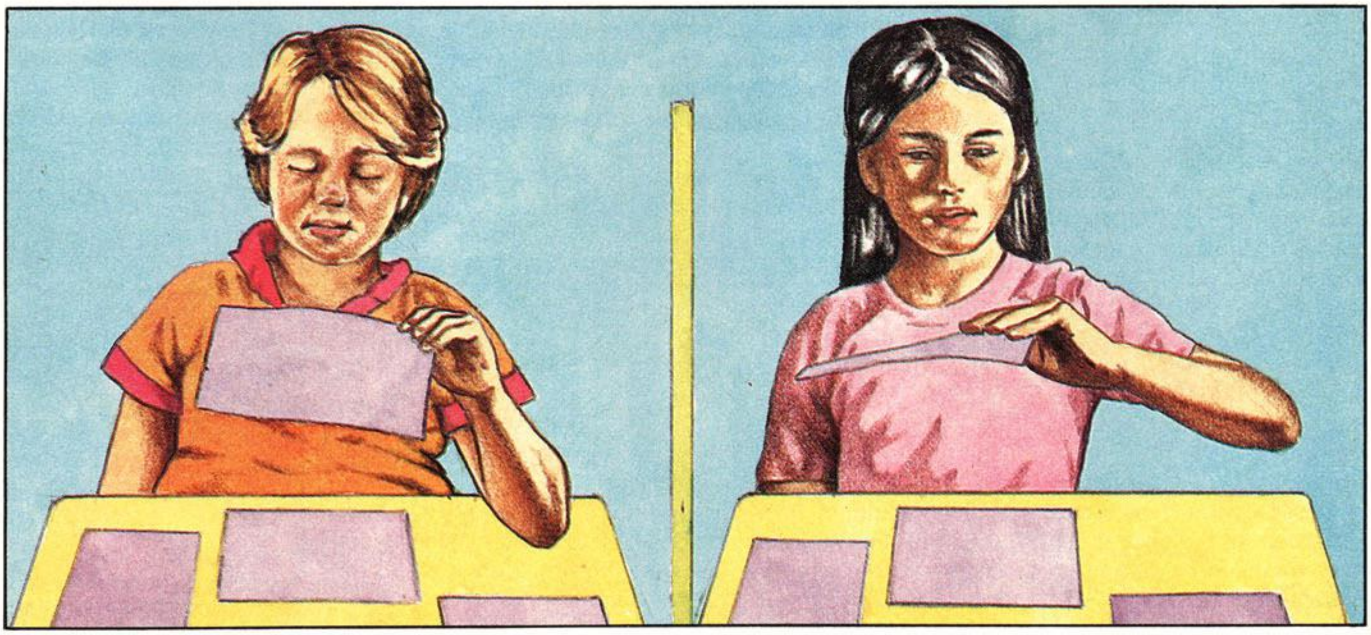
Cut out a simple turtle from green paper and add features with colored markers. Then cut out the words "Turtle Talk" from colored paper. Post both on a bulletin board with a paper border. (You might wish to put "Turtle Talk" in a conversation bubble.) Fill the rest of the board with students' programs, pointers, and daily log entries.

Marc Boren
Syracuse, NY

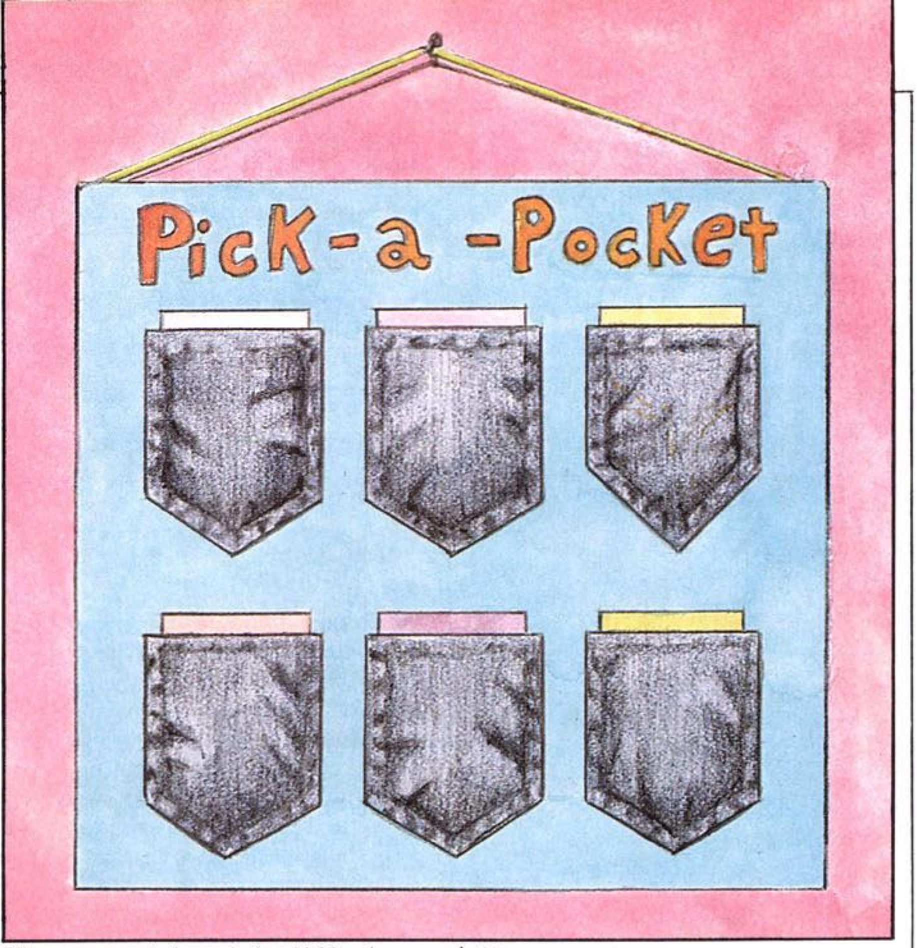
QUICK TIPS

- **After you give instructions for operating a computer program to one student, let that student instruct a second user. Let the second user instruct a third, and so on.**
- **Take a school computer home and play with it!**
- **Assign one child each week to keep your computer center neat and clean.**
- **Display photos of school employees as they use computers for work.**

Cyndi Berndt
Angola, IN



Students learn the importance of clear, step-by-step directions as they follow each other's directions for constructing designs.


Pick-a-Pocket

File computer task cards in old blue jeans pockets.

TEACH SEQUENCE WITH A CLOTHESLINE

I tell my first graders that when they talk to a computer, they must be able to give it information in correct order.

To give kids practice with sequencing, I string a clothesline from one wall of my room to another, just low enough for students to touch by raising their arms. Then I compose a six-line story. I write each line of the story on a separate 8″x11″ piece of paper and shuffle the papers. Using clothespins, children are to hang the story sentences in correct order on the clothesline.

Elsie Campbell
Madison, WI

DON'T THROW THAT COMPUTER BOX AWAY!

I saved the plastic-foam packing case that my computer came in and turned it into a great dustfree carrying case for the machine.

To hold the case together, I cut two thin strips from a rubber inner tube. After I pack the computer inside, I slip the rubber strips around the case to hold everything in place. Then I'm ready to carry my computer home!

Mara Dillon
Washington, D.C.

POCKET YOUR TASK CARDS

When my students tell me they want to use the classroom computer, I tell them to go pick a pocket.

Immediately they go to Pick-a-Pocket, a wall hanging that holds my computer task cards, and they choose an activity to do on the computer.

The hanging is made up of old blue jeans pockets that I sewed onto a 2′x3′ piece of felt. I cut out the words "Pick-a-Pocket" in felt, and glued them at the top of the hanging. To make the twine hanger, I cut two holes in the top of the felt and knotted an end of twine through each. Then I placed a card with computer activities in each pocket.

Thanks to our pocket display, students always know where to find computer activities to try. (*For ready-made activity cards, see this month's Learning Center column.*)

Joan Frost
Houston, TX

SEND US YOUR MICRO IDEAS

Do you have computer activities, bulletin boards, or management tips you'd like to share? Send them to Micro Ideas, *Teaching and Computers*, 730 Broadway, New York, NY 10003. We'll pay $15 to $30 for each idea we publish and $5 for each quick, one-line tip. ☐

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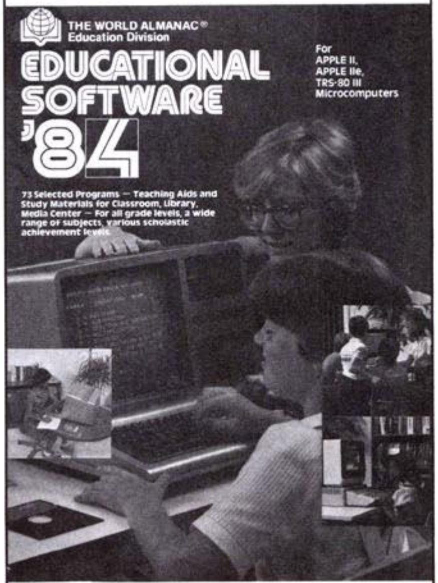
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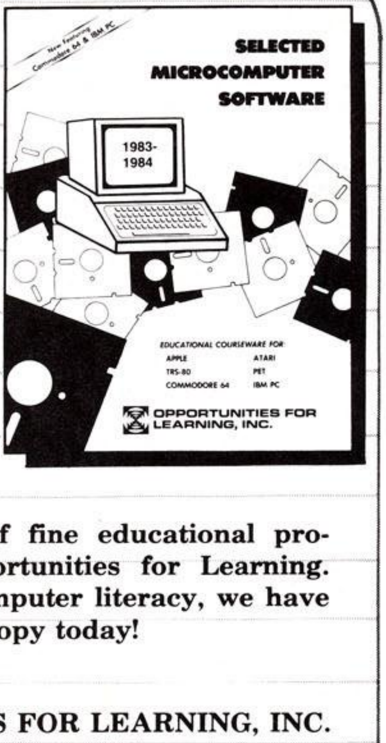

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READINESS REPRODUCIBLES

Two worksheets to teach primary students about computer hardware.

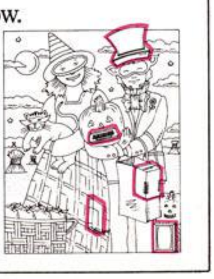
The next two pages are worksheets that introduce primary children to the parts of a computer. Tear them out, run them off, and you have an instant lesson!

In the first sheet, Parts of a Computer, children are to label five major parts: a keyboard, monitor, disk drive, cassette recorder, and printer. Show kids these parts on a real computer if you can.

Explain to them that computers use either a disk drive or a cassette recorder. A *disk drive* is a small machine that takes information from a disk and sends it to the computer's "brain" or central processing unit, located under the keyboard. A disk drive can also take information from the computer and store it on a disk. *Cassette recorders* do a similar job. They send information from or store information on a cassette tape. If possible, show students an actual disk and cassette.

Tell children that the *keyboard* is the part of the computer that looks like a typewriter. You can send information to the computer (input) by pressing its keys. The *monitor* is the part that looks like a television screen. It displays information from a computer (output). A printer prints out computer information on paper.

The second sheet, Find the Computer Parts, tells kids to find five computer parts hidden in the lines of a Halloween picture. Students are to put an X on each part and then color the whole Halloween scene. The hidden parts, a monitor, keyboard, disk drive, cassette recorder, and printer, are shaded in the miniature facsimile below.



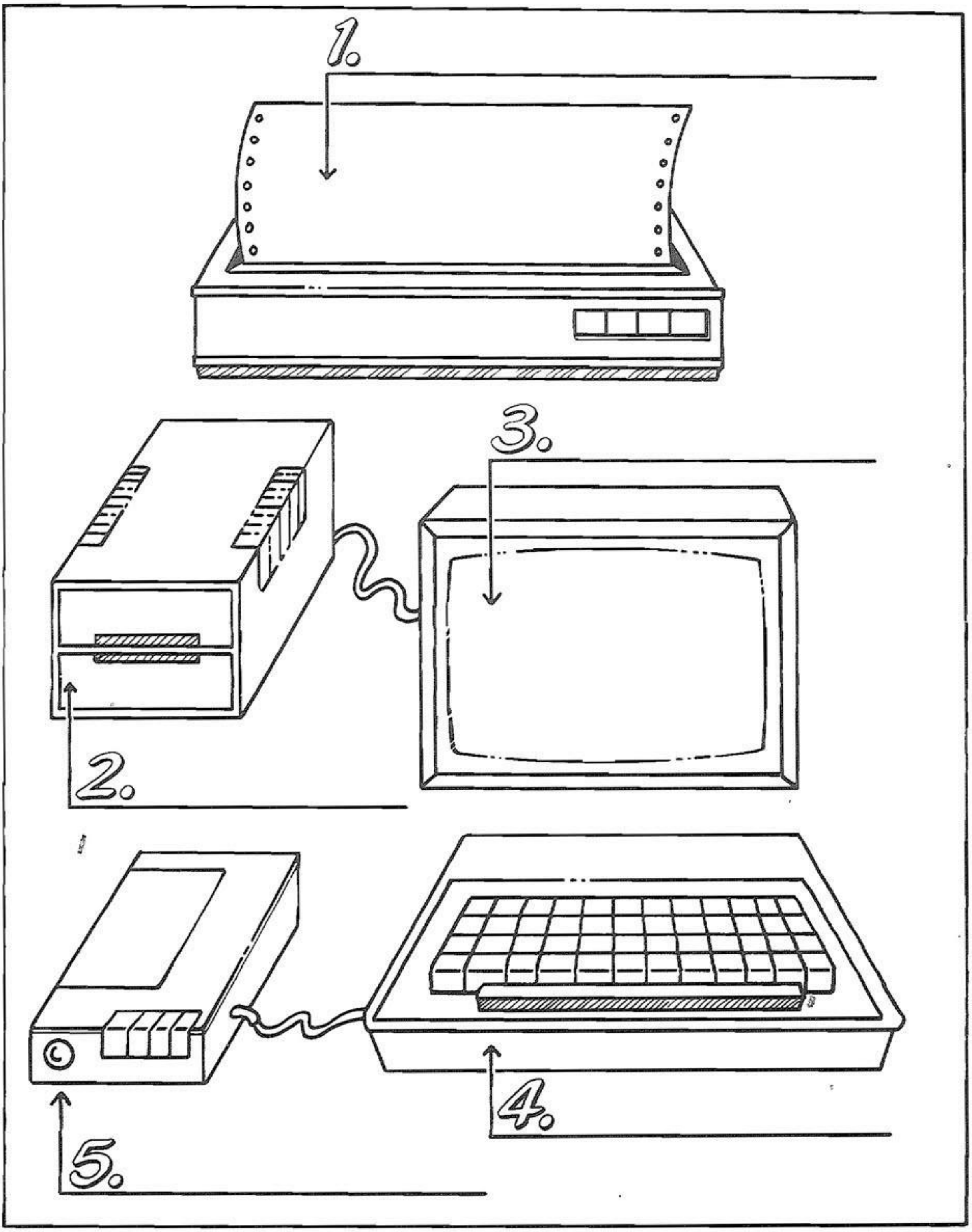
Minifacsimile of Find the Computer Parts worksheet. Hidden pictures are outlined in red.

CIRCLE 10 ON READER SERVICE CARD

Name ____________________

Parts of a Computer

Label the main parts of a computer.
Use these names: monitor, printer, disk drive, recorder, keyboard.



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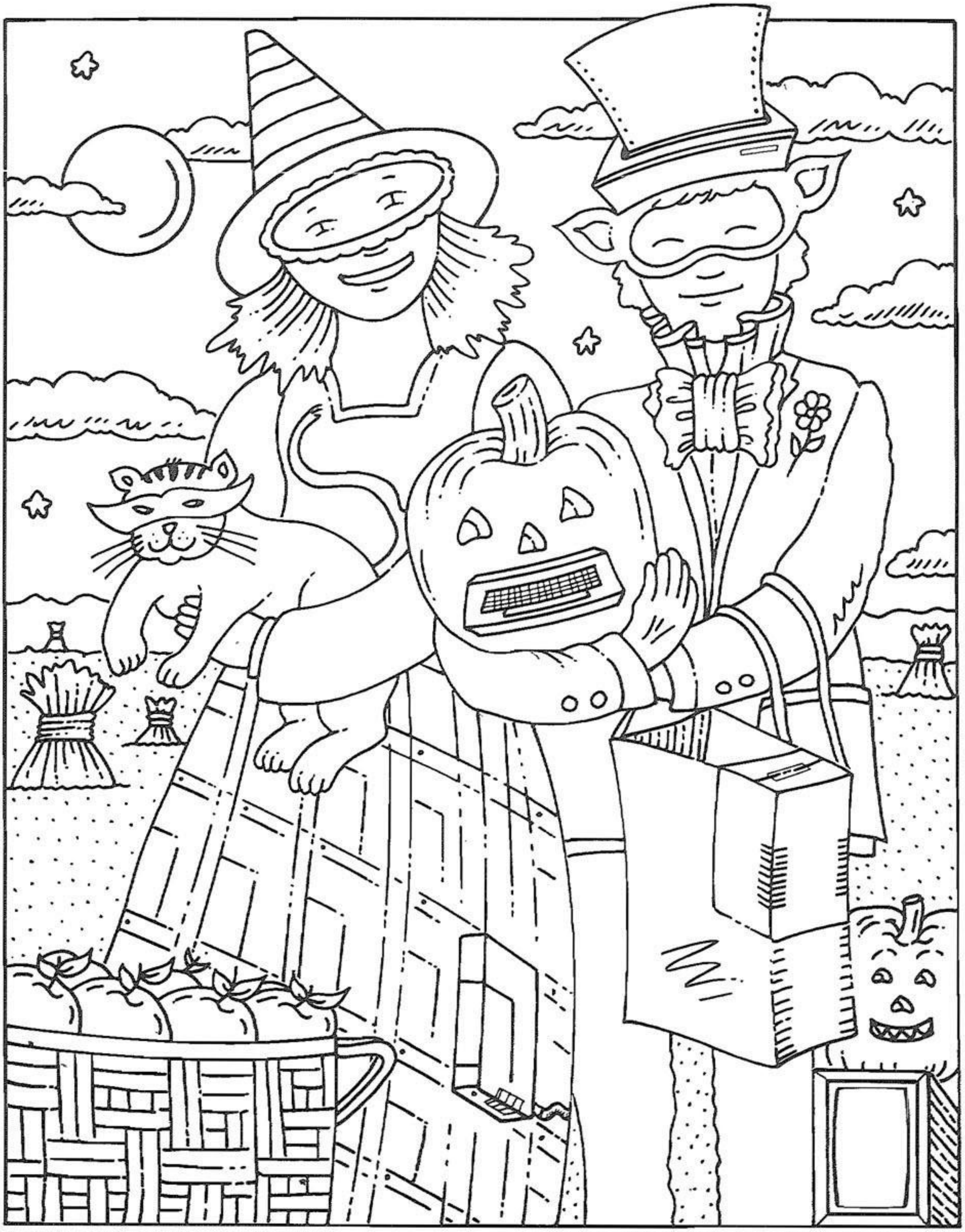
Name ____________________

Find the Computer Parts

There are five computer parts hidden in this picture.
Put an X on each. Color the picture.



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Logo Notebook

Lesson Two: **Grids, Mazes, and Maps**

by Steve Tipps and Tom Lough

LAST MONTH, LESSON ONE OF THE LOGO NOTEBOOK introduced students to the four basic Logo commands: FORWARD, BACK, RIGHT, and LEFT. To better understand the commands, students explored directional movement with their bodies, with objects, and, finally, with Logo's turtle, a triangular object that students can move around the screen.

This month, students will explore directional movement further using grids, mazes, and maps. They will also learn about distance—the length the turtle travels in a given direction.

A CLASSROOM GRID

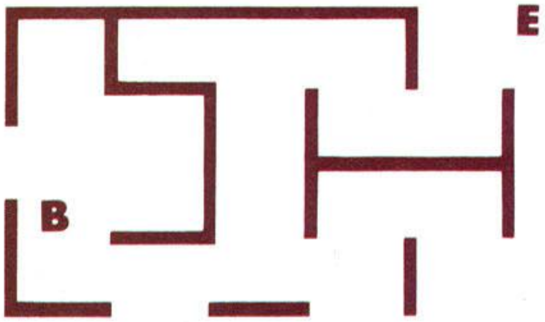
Objective: Students move from one point on a "real life" grid to another by following a series of Logo commands.
Activity: Arrange the desks and chairs in rows and columns to form a grid.

Have students determine the number of steps it takes to walk from one point on the grid, such as the first desk, first row; to another point, such as the fourth desk, last row. Using the commands FORWARD, BACK, LEFT, and RIGHT, tell students to map out on paper various paths between desks. If you have introduced degrees to your students, they should use commands like LEFT 90 and RIGHT 30 for turns. Otherwise, they can use "little turn" for less than 90 degrees, "regular turn" for a square turn, and "large turn" for more than 90 degrees.

Next, divide students into "walkers" and "talkers." The talker tells the walker where to start and gives commands: "FORWARD 3, RIGHT 90" or "FORWARD 3, RIGHT A LITTLE TURN," and so on. The walker acts out each command until he or she reaches the talker's intended destination. Walkers and talkers then reverse roles and start over.
Extension: (1) As children master the simple FORWARD, BACK, RIGHT, and LEFT commands, invent intricate and irregular grids and insert barriers (such as chairs blocking the aisles) and dead ends. (2) Create other types of grids by sticking masking tape on the floor or drawing with chalk lines on asphalt surfaces.

MAZES AND PUZZLES

Objective: Students use Logo commands to travel through mazes drawn on paper.
Activity: Draw a maze with a network of passages. Here's an example:



Students think of Logo commands to take them from B to E. Now set up challenges like the following illustration.

Which of the following sequences tell how to get from B to E?

1. RT 90 FD 10 LT 90 FD 30 LT 90 FD 10 BK 40 LT 90
2. RT 90 FD 10 LT 90 FD 30 RT 90 FD 10 RT 90 FD 10 LT 90 FD 10
3. LT 90 FD 10 RT 90 FD 10 RT 90 FD 10 LT 90 FD 10 LT 90 FD 10
4. LT 90 BK 10 LT 90 BK 30 LT 90 FD 10 LT 90 BK 10 LT 90 BK 10

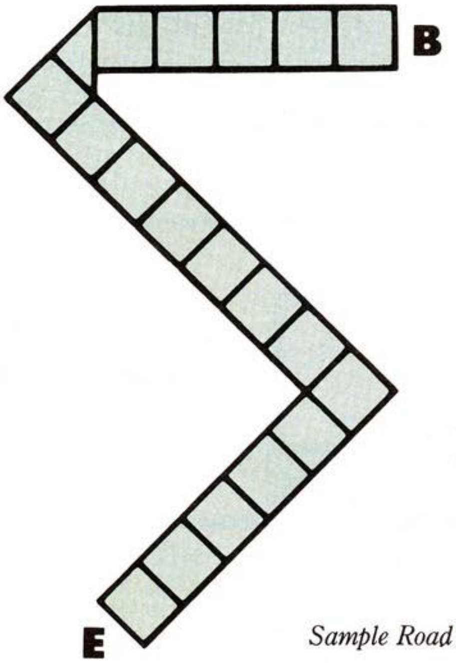
(Continued)

***Steve Tipps** is an assistant professor of education at the University of Virginia. **Tom Lough** is editor of the* National Logo Exchange *newsletter in Charlottesville, VA.*

Children should recognize that 2 and 4 are both solutions to the maze. Challenge students to move from B to E with only LEFT turns as in sequence 4. Note that 1 and 3 are not solutions.
Extension: Adapt mazes from commercial materials or have children create their own.

MANIPULATIVE MAZES

Objective: Students create a series of commands to travel a concrete, predetermined route.
Activity: Line up primary blocks to form streets. Let one block represent 10 steps and let triangle pieces indicate 45 degree turns. Have students create streets out of the blocks and then study them to determine the Logo command series needed go from one end to the other. Children can check their work by using the commands series to steer a toy truck from one end of the block route to the other.



Sample Road Block

One possible solution for this illustrated street of blocks is:

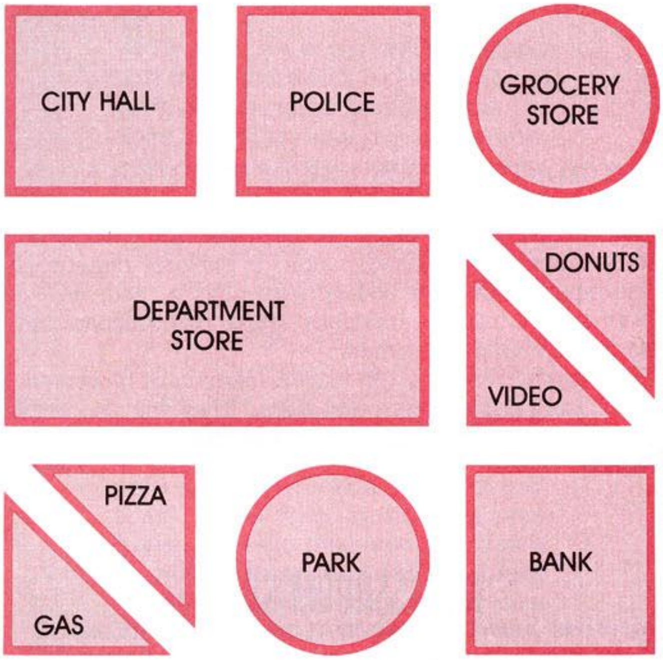
```
FORWARD 50
LEFT 45
FORWARD 10
RIGHT 90
BACK 70
LEFT 90
FORWARD 50
```

Extension: (1) Suggest students design tricky roads with barriers and dead ends or roads that resemble squares, circles, numbers, and letters. (2) Have students record the sequence of commands that produce these shapes in a notebook to try out on the screen turtle later.

TOWN MAP

Objective: Students move the screen turtle to different destinations on a map.
Activity: On a transparent piece of acetate, draw a simple map of a town.

Label names of stores, the police department, city hall, and so on. Tape the map over a computer screen. Be sure to match the center of the screen with the center of the diagram.



Sample town map for making a transparent overlay.

Instruct children to use Logo commands to move the turtle from place to place on the map. For example, what commands would they use to travel from city hall to police headquarters, or from the grocery store to the department store?
Extension: (1) Construct more complex city maps with diagonal streets and traffic circles. (2) As children master these maps, add roadblocks, detours, and one-way streets. (3) An enlarged map of downtown Washington DC, with its many circular streets, is a real challenge to turtle drivers!

PROGRAM FOR A MAP

Objective: Students manipulate the screen turtle on a turtle graphics map.

Activity: Even if you aren't familiar with Logo procedures yet, you can convert the acetate town map used in the previous activity into a screen replica by typing in the following program. Be sure to type procedures exactly and follow the right versions for your machine.

To call up the town map, have students type MAP and then press RETURN or ENTER. Now kids are ready to travel from place to place on a turtle graphics map!

(Continued on page 59)

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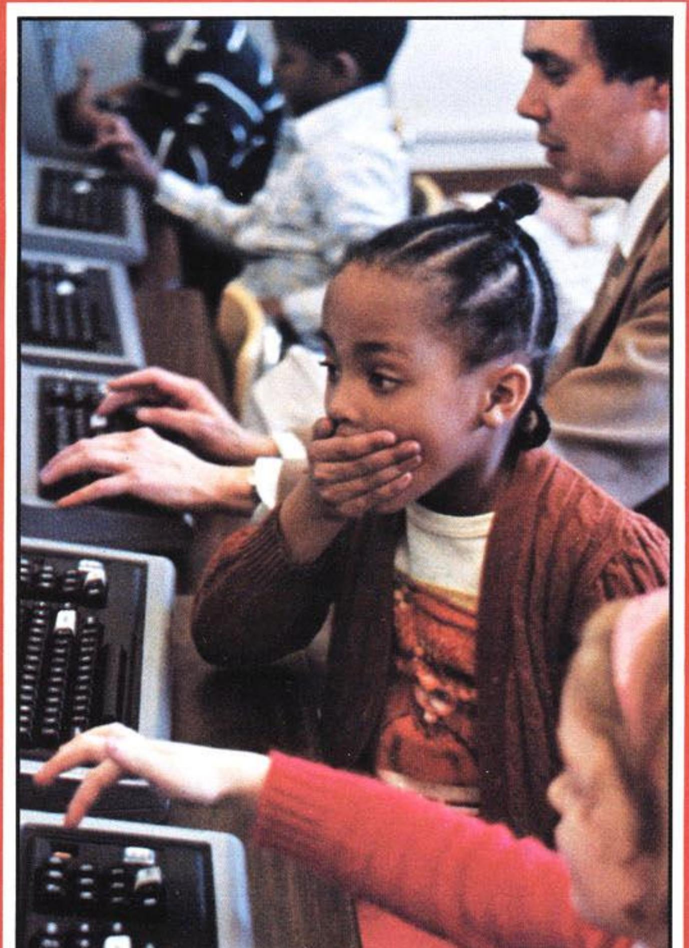

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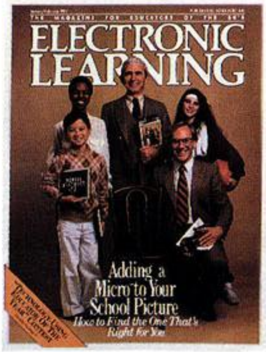
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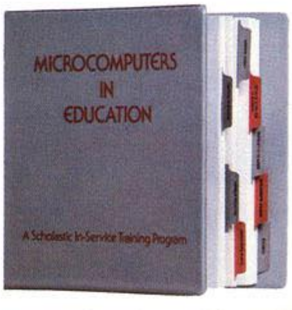
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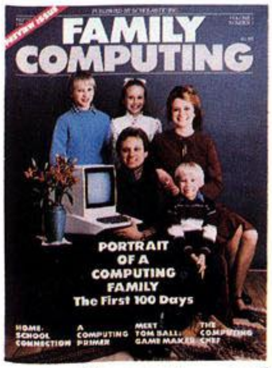
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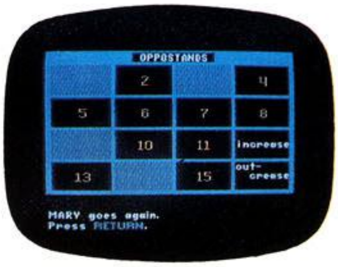

```
OPPOSTANDS
     2          4
5    6    7     8
     10   11    increase
13        15    out-
                crease
MARY goes again.
Press RETURN.
```

WIZWARE™

Wizware™ ranges from fast-paced action games to interactive programs that allow kids to explore the computer as their own personal mind tool.

This expanding line of programs is designed to motivate kids 6 to 16 to use their imaginations and explore what the computer can do.

Available in cassette and disk formats for Apple,® Atari,® TI, and VIC-20® at your local book, video, or computer store.

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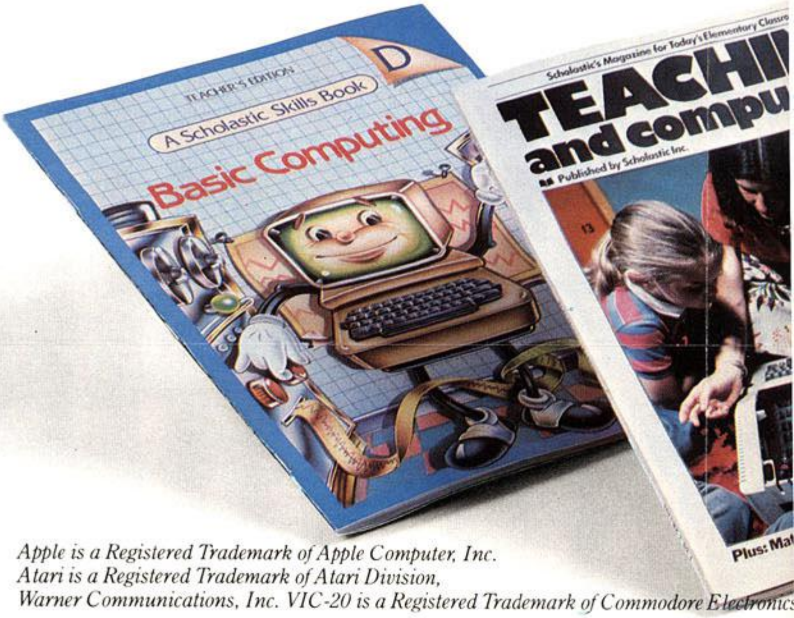
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Scholastic's Magazine for Today's Elementary Classro
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LPING TEACHERS, STUDENTS, A
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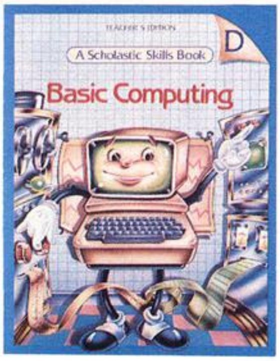
For Students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A Scholastic Skills Book
D
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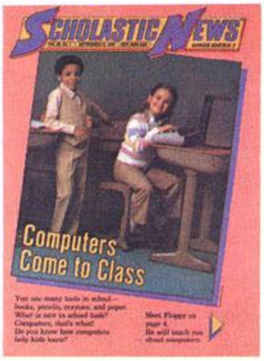
Grades 1-6:
BASIC COMPUTING WORKBOOKS

Low-cost workbooks–designed to introduce students to computer literacy skills–that can be used with or without computers.

Special emphasis on critical reasoning and problem-solving skills; excellent tool for developing better thinkers while preparing children for meaningful and productive computer experiences.


SCHOLASTIC NEWS
Computers Come to Class
You use many tools in school—books, pencils, crayons, and paper. What is new in school tools? Computers, that's what! Do you know how computers help kids learn?
Meet Floppy on page 4. He will teach you about computers.

Grades 1-6:
SCHOLASTIC NEWS

Scholastic's weekly magazines for classrooms now include pencil-and-paper computer literacy and awareness activities and articles in each issue.

This computer-related content is carefully sequenced to align with computer curriculum guidelines being introduced in many states.

Grades
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Scholastic Wizware
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Four full-length programs that let you explore and create.
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Ages 10 and up
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NEWTECHBOOKS
WORD PROCESSING
NEWTECHBOOKS
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THE BANK STREET writer
Teaching computers
September 1983
A CHILD'S FIRST LOOK AT COMPUTERS
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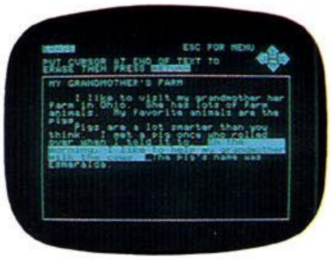
Plus: Math puzzlers, Logo for beginners, and lots more!
PORTRA
OF A COMPUTING FAMILY
The First 100 Day
A COMPUTING PRIMER
MEET TOM BALL: GAME MAKER

ommodore Electronics Ltd.

S, AND FAMILIES TER EDUCATION.

Grades 4-8:

SCHOLASTIC'S BANK STREET WRITER



```
                           ESC FOR MENU
PUT CURSOR AT END OF TEXT TO
ERASE THEM PRESS [illegible]
 MY GRANDMOTHER'S FARM
      I like to visit my grandmother her
 farm in Ohio.  She has lots of farm
 animals.  My favorite animals are the
 pigs.
      Pigs are a lot smarter than you
 think.  I met a pig once who rolled
 over when I told it to. [illegible]
 [illegible] The pig's name was
 Esmeralda.
```

The word processing program that has revolutionized the writing process for thousands of students!

Remarkably straight-forward and easy to use, SCHOLASTIC'S BANK STREET WRITER is the only version that includes a comprehensive Teacher's Manual that both clarifies how to use the program and develops extension writing activities that serve as models for teachers' own creative projects.

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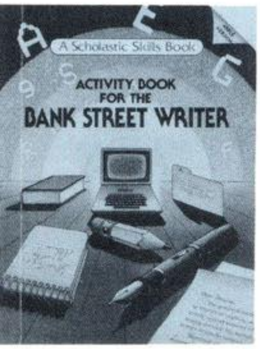
A Scholastic Skills Book
ACTIVITY BOOK FOR THE
BANK STREET WRITER

ACTIVITY BOOK for Scholastic's Bank Street Writer

An easy-to-use worktext that extends and enhances the usefulness of Scholastic's Bank Street Writer as a classroom tool. Includes both practice activities in using the Writer and composing activities.

Set of 10 includes a Teaching Guide.

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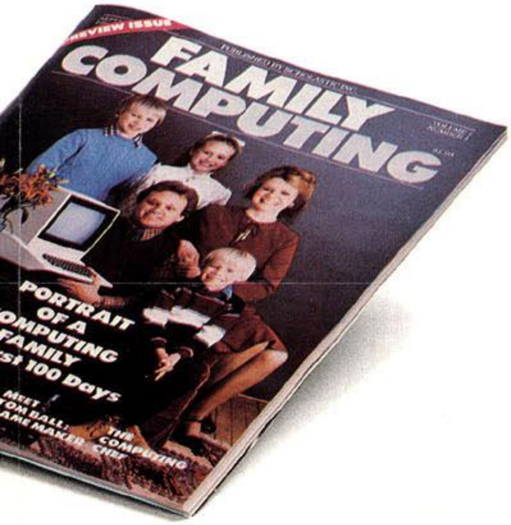

PREVIEW ISSUE
FAMILY COMPUTING
PUBLISHED BY SCHOLASTIC
PORTRAIT OF A COMPUTING FAMILY
st 100 Days

Grades 4-8:

MICROZINE, School Edition

BEWARE
PRESS SPACE BAR TO CONTINUE

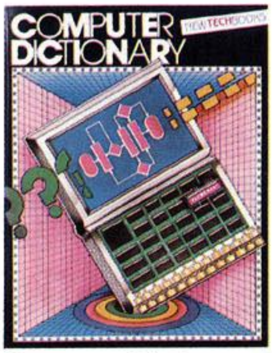
An interactive magazine on a computer disk.

Each bimonthly disk contains four interactive programs that give students opportunities to use their critical reasoning, problem-solving, and programming skills.

The emphasis is on tapping the full interactive and graphic potential of the computer.

Documentation includes a step-by-step student handbook with each issue, and a 16-page Teaching Guide, with lesson plans.

Apple® version only.


COMPUTER DICTIONARY
NEW TECHBOOKS

Grades 7-12:

NEW TECH WORKBOOKS

Computer simulations and other skill-building exercises, plus background information that makes the computer age meaningful.

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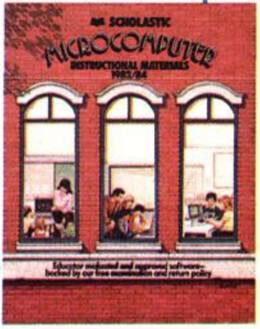
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SCHOLASTIC'S BANK STREET WRITER Apple® version	MP94180-1	$ 95.00		
Atari® version	MP93886-x	95.00		
MICROZINE; School Edition Apple® version	MP9789	$179.00 *(6 bi-monthly issues)*		
MICROCOMPUTERS IN EDUCATION TEACHER-TRAINING PROGRAM Apple® version	MP92321-8	$735.00		
Atari® version	MP93822-3	735.00		
PET version	MP92885-6	735.00		
TI version	MP93567-4	735.00		
TRS-80 version	MP93221-7	735.00		
WIZWARE™ programs available locally from book, video, and retail stores				

BOOKS

BASIC COMPUTING WORKBOOKS* Grade 1	MP34301	$ 2.95		
Grade 2	MP34303	2.95		
Grade 3	MP34305	2.95		
Grade 4	MP34307	2.95		
Grade 5	MP34309	2.95		
Grade 6	MP34311	2.95		
NEW TECH BOOKS* Computer Thinking	MP34313	$ 2.95		
Computer Dictionary	MP34315	2.95		
New Jobs/New Technology	MP34317	2.95		
Word Processing	MP34319	2.95		
Understanding Computers	MP34330	2.95		
ACTIVITY BOOK FOR SCHOLASTIC'S BANK STREET WRITER Apple® version available early 1984.	MP34329	39.50 *(Set of 10 + Teaching Guide)*		

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8309H

For more information about the products and services advertised in this issue...

1 Selectively circle the numbers on the reply card.

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4 Tear out reply card and mail promptly. Cards postmarked after expiration date cannot be processed.

TEACHING and computers

October 1983
(Expires December 1)
READER SERVICE CARD

Please circle an entry for each category.

I. Level (check one)
- ☐ a. Elementary (k-6; k-8)
- ☐ b. Middle School
- ☐ c. Junior High
- ☐ d. Senior High
- ☐ e. Junior/Senior
- ☐ f. College
- ☐ g. District
- ☐ h. State
- ☐ i. Federal/National
- ☐ j. Other

II. Your primary job (check one)
- ☐ 1. Administrative (including Superintendent/Principal)
- ☐ 2. Teaching (including Department Head)
- ☐ 3. Evaluation/Purchasing
- ☐ 4. Curriculum Development
- ☐ 5. Media Specialist/Librarian
- ☐ 6. Other

III. What is your primary involvement with computers?
- ☐ a. Actively use computers
- ☐ b. Recommend type/brand
- ☐ c. Approve purchase
- ☐ d. General interest
- ☐ e. All of the above

IV. Your school or district's investment in electronic learning materials.
- ☐ 1. Increasing
- ☐ 2. Decreasing
- ☐ 3. No Change

V. In which area does your school or district use computers? (check one)
- ☐ a. Interdisciplinary (elementary classroom)
- ☐ b. Math
- ☐ c. Reading
- ☐ d. Science
- ☐ e. Business/Vocational Education
- ☐ f. Computer Sciences
- ☐ g. Social Sciences
- ☐ h. English/Language Arts
- ☐ i. Other

VI. How does your school or district use computers?
- ☐ 1. Primarily for administrative purposes
- ☐ 2. Primarily for instructional purposes

VII. What type of software has your school/district purchased in the past year?
- ☐ a. Curriculum-based courseware
- ☐ b. Fun/Learning software
- ☐ c. Word Processing
- ☐ d. Utility
- ☐ e. Programming

VIII. Your school/district enrollment
- ☐ 1. Under 300
- ☐ 2. 300–499
- ☐ 3. 500–999
- ☐ 4. 1000–4999
- ☐ 5. 5000–9999
- ☐ 6. 10,000–24,000
- ☐ 7. 25,000 +

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91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
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School or Office

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TEACHING and computers

October 1983
(Expires December 1)
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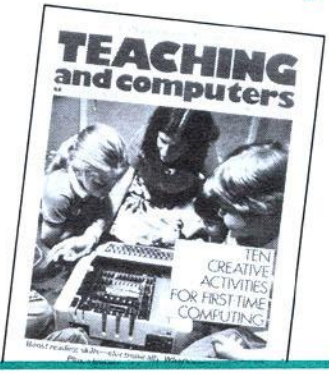

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TOWN MAP PROGRAM

1.

Directions: Type in the TO MAP procedure below that corresponds with your LOGO version.

MIT Logo:

```
TO MAP
FULLSCREEN
BG 3 PC 0
FIRST.ROW
SECOND.ROW
THIRD.ROW
SET.TURTLE
END
```

TI Logo:

```
TO MAP
CB 3 SC 0
FIRST.ROW
SECOND.ROW
THIRD.ROW
SET.TURTLE
END
```

Apple Logo:

```
TO MAP
FULLSCREEN
SETBG 3 SETPC 0
FIRST.ROW
SECOND.ROW
THIRD.ROW
SET.TURTLE
END
```

2.

Directions: Type in all of the following procedures.

All Versions:

```
TO FIRST.ROW
FIRST.POSITION
SQUARE
POSITION.RIGHT
SQUARE
POSITION.RIGHT
CIRCLE.BLOCK
END

TO FIRST.POSITION
PU
FD 50 LT 90 FD 120 RT 90
PD
END

TO SECOND.ROW
SECOND. POSITION
RECTANGLE
POSITION.RIGHT POSITION.RIGHT
TRIANGLE.BLOCK
END

TO SECOND.POSITION
PU HOME BK 30 LT 90 FD 120 RT 90 PD
END

TO THIRD.ROW
THIRD.POSITION
TRIANGLE.BLOCK
POSITION.RIGHT
CIRCLE.BLOCK
POSITION.RIGHT
SQUARE
END

TO THIRD.POSITION
PU HOME
BK 110
LT 90 FD 120 RT 90
PD
END

TO SET.TURTLE
PU HOME BK 40 PD
END

TO SQUARE
REPEAT 4 [FD 60 RT 90]
END

TO RECTANGLE
REPEAT 2 [FD 60 RT 90 FD 140 RT 90]
END

TO CIRCLE.BLOCK
PU FD 27 PD
CIRCLE
PU BK 27 PD
END

TO CIRCLE
REPEAT 24 [FD 8 RT 15]
END

TO TRIANGLE.BLOCK
TRIANGLE
DIAGONAL
TRIANGLE
DIAGONAL
END
```

3.

Directions: Type in the TRIANGLE procedure for your Logo version.

Apple and MIT Logo:

```
TO TRIANGLE
FD 50
RT 135
FD SQRT (50 * 50 + 50 * 50)
RT 135
FD 50 RT 90
END
```

TI Logo:

```
TO TRIANGLE
FD 50
RT 135
FD 71
RT 135
FD 50 RT 90
END
```

4.

Directions: Type in the Diagonal procedure for your Logo

Apple and MIT Logo:

```
TO DIAGONAL
RT 45
PU FD SQRT (2 * 60 * 60)PD
RT 180
LT 45
END
```

TI Logo:

```
TO DIAGONAL
RT 45
PU FD 85 PD
RT 180
LT 45
END
```

5.

Directions: Type in the POSITION.RIGHT procedure below.

All Versions:

```
TO POSITION.RIGHT
PU
RIGHT 90 FORWARD 80 LEFT 90
PD
END
```

← *Circle 13 on Reader Service Card.*

Software Showcase

SOFTWARE RECOMMENDED FOR TEACHERS BY TEACHERS

TEACHERS, media specialists, principals, and other educators have recommended the following software. If you are using a software program that you would like to recommend to other educators, send a detailed description of the program along with your comments on its strengths, weaknesses, and instructional uses to Software Showcase, *Teaching and Computers*, 730 Broadway, New York, NY 10003. We will pay $15 to $25 for each recommendation published.

ELEMENTARY, MY DEAR APPLE

COMPUTER: APPLE
TOPIC: MATH, SOCIAL STUDIES
LEVEL: GRADES 2–5

ELEMENTARY, MY DEAR APPLE consists of two math drills and the popular *Lemonade* simulation. The two math drills generate problems in addition, subtraction, multiplication, and division through a fourth grade or remedial fifth grade level and fractions at a fifth grade level. Although the math games are not tutorial in nature, they explain what students must do to solve problems correctly. Students can choose between practicing specific skills or solving random problems. One of my most reluctant math students is now a "math convert" and my best students still love the challenge of manipulating fractions mentally.

Lemonade asks students to determine a price for selling lemonade, depending on the weather conditions and how much materials and signs for advertisement cost. The simulation then generates a report on profits or losses after one day of selling and students adjust their prices and expenditures accordingly.

Price: $30 (disk)
Policies: No backups; no previewing
Source: Apple Computer, Inc., 10260 Bradley Dr., Cupertino, CA 90514

David Fiday
Media Director
Joliet, IL

BUMBLE GAMES

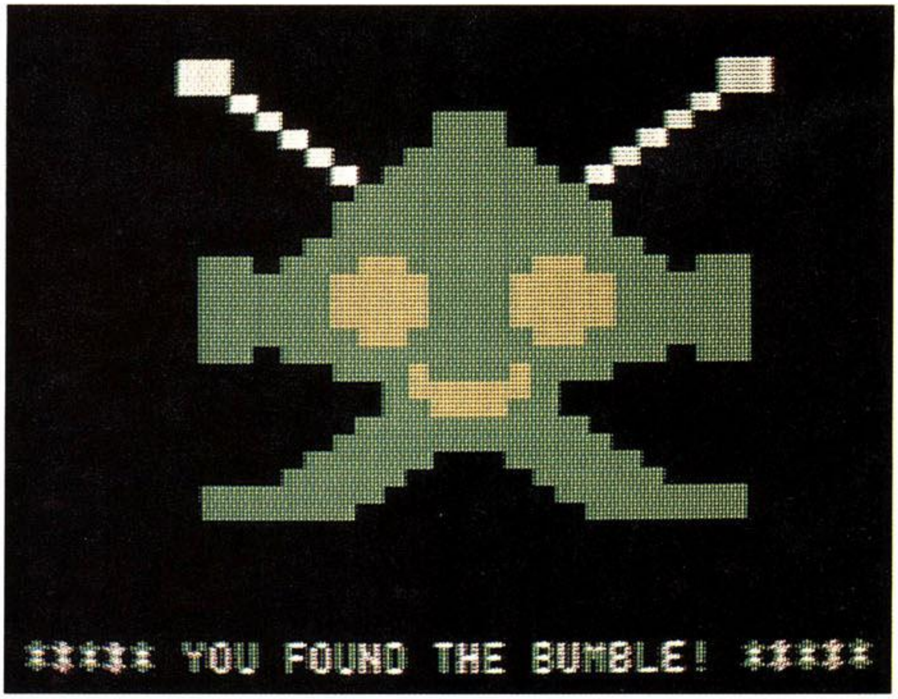
COMPUTER: RADIO SHACK COLOR COMPUTER, APPLE
TOPIC: MATH
LEVEL: PRESCHOOL TO GRADE 4

Bumble Games features Bumble the Bee in six colorful, easy-to-use, and friendly programs that teach simple graphing concepts. For example, Bumble Dots (the sixth program) teaches students how to distinguish between the *x* and *y* axis and how to use a grid to create designs.

If pairs of students each play one game, the whole class can use *Bumble Games* during an average class period.

Price: $39.95
Policies: $10 replacement fee; preview through dealers
Source: The Learning Company, 4370 Aldine Road, Portola Valley, CA 94025

Ann Dana
Microcomputer Consultant
Hinsdale Junior High School
Hinsdale, IL



***** YOU FOUND THE BUMBLE! *****

Solving a problem in *Bumble Games.* Photo by Mark Tuschman, The Learning Company.

THE GAME SHOW

COMPUTER: IBM, APPLE
TOPIC: VOCABULARY
LEVEL: GRADES 2–8

Based on the television game show *Password,* this 16-program disk features vocabulary quizzes in a variety of subject areas such as computers, animals, nursery rhymes, words, and more. Two players or two small teams compete, or one player competes against the computer. Players win points by guessing answers from a series of clues. Points decrease with capacity for teacher input. Following the format of the 16 programs included on the disk, teachers and students can easily create original quizzes in any subject area. *The Game Show* is a challenging and enjoyable way for students to enhance vocabulary skills. The ability to change the software to suit individual needs makes it invaluable.

Price: $39.95
Policies: Back-up included with disk; preview through dealer
Source: Computer Advanced Ideas, 1442-A Walnut St., Berkeley, CA 94709

Ann Dana
Microcomputer Consultant
Hinsdale Junior High School
Hinsdale, IL

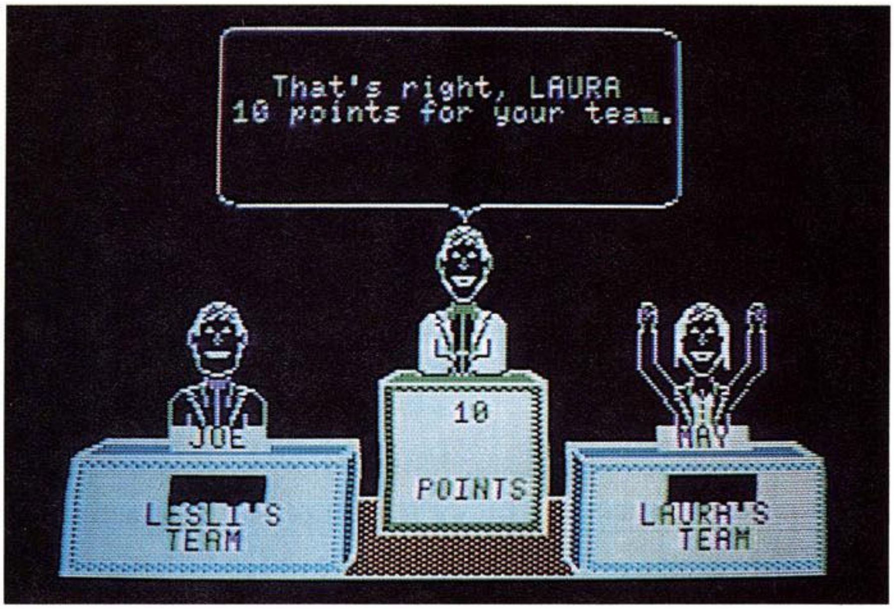
DIASCRIPTIVE READING

COMPUTER: PET, ATARI, APPLE, TRS-80 MODELS II/III
TOPIC: LANGUAGE ARTS
LEVEL: GRADES 3–8

Six diagnostic tests measure reading skills in vocabulary, sequence, main idea, fact and opinion, details, and inference. The computer then scores students on a reading level between three and eight and generates exercises based on the student's reading level. I have easily correlated the program to my reading curriculum and believe that other reading teachers can easily do so, too.

Price: $295 for 7 disks
Policies: $10 backup; 30-day preview
Source: Educational Activities, Freeport, NY 11520

Joan Rosella Webb
Reading Consultant
Pearland, TX



That's right, LAURA
10 points for your team.

Player guesses the correct answer in *The Game Show.*

BANK STREET WRITER

COMPUTER: ATARI 400, 800, 1200XL; APPLE
TOPIC: WORD PROCESSING
LEVEL: GRADES 4–12

Bank Street Writer is an easy-to-use word processor. It is appropriate for any subject area that requires writing. Three main menus — write, edit, and transfer — allow the user to manipulate text. The write menu allows the user to enter text; the edit menu lets the user erase, move, and replace text; while the transfer menu allows the user to save, retrieve, print, and delete text. A handy tutorial that teaches how to use the program is located on the reverse side of the disk.

Once students realize how easy it is to correct spelling, replace words, and move sentences, their writing will improve immensely. And what a help for teachers! Not only does *Bank Street Writer* save forms, letters, and exercises on disks, but it makes students' assignments legible.

Price: $95 package includes three copies, teacher's manual, and student guide
Policy: 30-day preview
Source: Scholastic Inc., 730 Broadway, New York, NY 10003

Ann Dana
Microcomputer Consultant
Hinsdale Junior High School
Hinsdale, IL

TESTING SERIES

COMPUTER: APPLE
TOPIC: TESTING
LEVEL: ALL GRADES

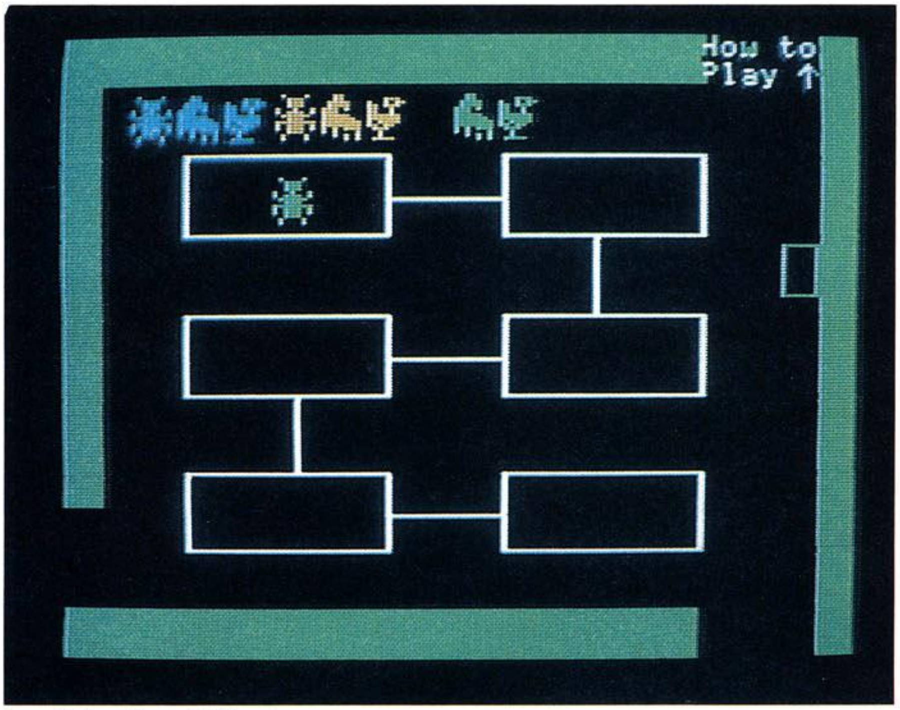
Testing Series is a set of five software programs that allow teachers to create, administer, print out, alter, and erase tests. Teachers choose between five test formats — multiple choice, matching, true/false, completion, and spelling.

The teacher enters information on any subject, and the computer sets up and types a test. Even teachers with little computer experience can create tests with *Testing Series* faster than on a typewriter. And tests can be saved on a disk for future use. Teachers can make personalized tests for each child to complete at the computer, or they can duplicate tests for the whole class. This time-saving program is a teacher's delight!

Price: $36 per disk; $160 for five disk series
Policy: Free replacement for damaged or defective disks; 30-day preview
Source: Educational Courseware, 3 Nappa Lane, Westport, CT 06880

Margaret Denicola
Upper Grade Coordinator
Turkey Hill School
Orange, CT

(Continued)



A puzzle from *Gertrude's Secrets.*

GERTRUDE'S SECRETS

COMPUTER: APPLE
TOPIC: THINKING SKILLS
LEVEL: GRADES K–4

Gertrude's Secrets is a colorful program that reinforces skills in following directions, logical thinking, and distinguishing color and shapes.

To play the game, students must pick up Gertrude, a goose, using the cursor and space bar, and carry her from room to room. Each room contains a different puzzle. To solve the puzzles, students match objects of similar shapes and colors. When the puzzle is complete, Gertrude flies in with a prize for the winner.

It is also fun to venture into the "shape-edit room," where players create their own puzzle pieces. The ability to change the game makes *Gertrude's Secrets* a continuous learning experience. It fits well into a language arts or science curriculum.

Price: $44.95
Policies: $10 replacement fee; preview through dealers
Source: The Learning Company, 4370 Alpine Rd., Portola Valley, CA 94025

Ann Dana
Microcomputer Consultant
Hinsdale Junior High School
Hinsdale, IL

MASTER TYPE

COMPUTER: ATARI 400, 800, 1200XL; COMMODORE 64; IBM; APPLE
TOPIC: TYPING SKILLS
LEVEL: GRADES K–12

Players of *Master Type* shoot down missles attempting to invade their planet by typing words, ranging from one to nine letters. Letters disintegrate if they are typed correctly. If they are typed incorrectly, the player's spaceship explodes.

Lessons start with single letters using the home row keys and progress to more difficult keys and long words. Each of the 17 lessons has a beginner mode that allows practice on just the new keys. Following each lesson, the program reports the number of words typed per minute and the percent typed correctly or incorrectly. In addition, teachers can add customized lessons. *Master Type* is an excellent program and very popular with my students.

Price: $39.95; $49.95 for IBM
Policy: Back-up disk included with five disk purchase
Source: Lightning Software, P.O. Box 11725, Palo Alto, CA 94306

Dan Eggleston
Teacher
Lamar Junior High School
Austin, TX

DICTIONARY

COMPUTER: PET
TOPIC: LANGUAGE ARTS
LEVEL: GRADES 2–4

DICTIONARY gives students practice in locating words in the dictionary. Written on three skill levels, the program first presents a word along with a dictionary page showing only guide words at the top. Students indicate whether the word appears before, on, or after that page. On the second level, the program displays four dictionary pages and a word. Students decide on which of the pages the word appears. The third level requires the use of a dictionary. Given two words on the screen, such as "fake" and "fire", the student must find a word in the dictionary that falls between the two given words and type it into the computer. By looking up words in the dictionary, students not only practice dictionary skills, but increase their vocabulary as well.

Dictionary keeps my students' interest for the 10 to 40 minutes it takes to run the program, but playing it more than once may be tedious as it's not very interesting to locate words a second time.

Price: $9.95 (cassette and disk)
Policies: Free replacement; return with purchase order
Source: Microcomputers and Education, Robbinsdale School District #281, 4148 Winnetka, Minneapolis MN 55429 (Also available through Scholastic Inc., 904 Sylvan Ave., Englewood Cliffs, NJ 07632.)

Polly Tafrate
Teacher
South Salem, NY

PRESCHOOL IQ BUILDER

COMPUTER: APPLE, TI 99/4A
TOPIC: READINESS
LEVEL: AGES 3–6

Using only the S (same) and D (different) keys, the first five lessons of *Preschool IQ Builder* teach the concept of same and different through shapes, colors, and letters. For example, two rectangles, one yellow and the other red, appear on the screen. The rectangles are not identical because they have different colors, and so students must press D for different. Other shapes resemble letters and still others are "nonsense" shapes.

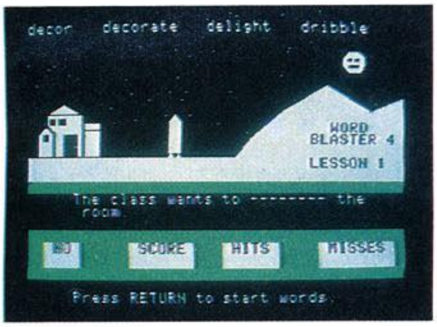
The sixth and final lesson, The Letter Builder, uses all keys to reinforce letter recognition. Students learn one section of the keyboard at a time until they master all the letters.

Although *Preschool* is designed primarily for home use, I use it effectively in small groups—no more than 10—with my kindergartners and first graders. I find that children generally do 70 to 80 problems before they tire. The program does require some adult supervision for changing lessons. The user's guide (included) is clear on how to run the software.

Preschool also doubles as a diagnostic tool for discovering reversals, color blindness, and other weaknesses.

Price: $23.95 (Apple disk); $18.95 (TI cartridge)
Policies: $5 backup
Source: Program Design Inc., 95 Putnam Ave., Greenwich, CT 96830

David Fiday
Media Director
Joliet, IL



The class wants to -------- the room.

Press RETURN to start words.

Blasting words to make sentences in *Word Blaster.*

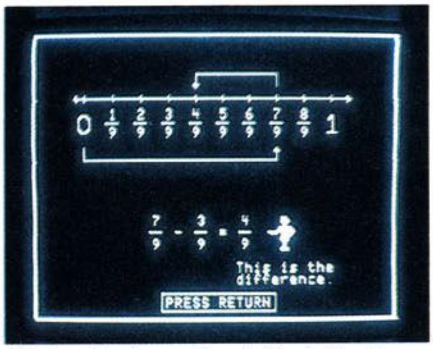
WORD BLASTER

COMPUTER: TRS-80 MODELS I/III, ATARI 800, APPLE
TOPIC: LANGUAGE ARTS
LEVEL: GRADES 2–4

Based on the Cloze method for teaching reading skills, *Word Blaster* presents a series of 45 game-format lessons on concepts such as sound-symbol correspondence, sentence structure, and comprehension. The program presents an incomplete sentence and a string of words across the screen. Students "shoot down" the word that best completes the sentence by pressing the space bar. Teachers can vary the speed and difficulty of the lessons. I especially like the student progress chart, scoring information, and excellent documentation that comes with the software. *Word Blaster* has proven to be appropriate for both my remedial and gifted students.

Price: $150 for 2 disks or 10 cassettes
Policies: 1 free backup (user makes); 30-day preview
Source: Random House School Division, 400 Hahn Rd., Westminster, MD 21157; 800/638-6460

Michael Parrish
Resource Specialist
Salinas, CA



This is the difference.

PRESS RETURN

Solving a fraction problem in *The Arithmetic Classroom.*

THE ARITHMETIC CLASSROOM

COMPUTER: APPLE, IBM
TOPIC: MATH
LEVEL: GRADES 4–8

The Arithmetic Classroom teaches basic operations, fractions, and decimals. The package includes eight lesson disks and a game disk that reinforces the concepts learned in the lessons.

Each lesson begins with an explanation of the concept to be mastered and several examples for the student to practice. After passing a test, students may continue to the next lesson. Correct answers get positive graphic reinforcement. When responses are incorrect, hints are given before the correct method is shown. This is an excellent series of programs. My students enjoy the lessons and they love the games disk.

Price: $49.95 each; $29.95 for game disk
Policies: Back-up half-price; $9.95 for preview disk
Source: Sterling Swift Publishing Co., 1600 Fortview Rd., Austin, TX 78704

Dan Eggleston
Teacher
Lamar Junior High School
Austin, Texas

(Continued)

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★ **BASIC SOFTWARE**—This tape contains a basic introduction to computer programs in a simple overview approach to software and how it relates to a computer. (TDC-3)
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Software Showcase *continued.*

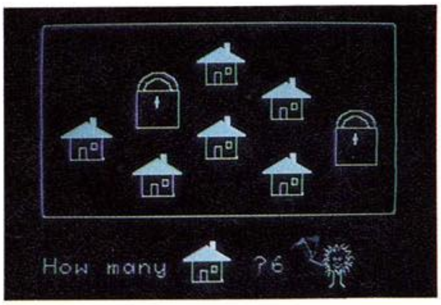
WORD FAMILIES

COMPUTER: APPLE
TOPIC: LANGUAGE ARTS
LEVEL: GRADES 1–3

WORD FAMILIES is a phonics supplementary program that drills beginning and ending consonants and medial vowels using more than 300 practice words. The screen displays a word such as "cat" with one letter underlined and a set of four extra letters, such as "b", "d", "h", and "f". Students decide which extra letters make new words when substituted for the underlined letter. In this case, "b", "h", and "f" can substitute for the "c" in "cat". A TV set in the middle of the screen displays each of the new words formed: "bat", "hat", and "fat". I use *Word Families* with one to three students in a group. I ask students to say each word out loud so that partners can correct mispronounced words. A few "cinchy" problems at the beginning motivate students to try the harder ones. *Word Families* is very simple to operate and compliments most phonics programs.

Price: $29.95 (disk)
Policies: $10 backup; previewing through dealers
Source: Hartley Software, Dimondale, MI 48821

David Fiday
Media Director
Joliet, IL



Counting objects in *Elementary Volume 7.*

ELEMENTARY VOLUME 7

COMPUTER: APPLE
TOPIC: LETTER RECOGNITION, COUNTING
LEVEL: GRADES K–2

Elementary Volume 7 introduces children to basic number and letter facts through nine drills. A menu based on pictures and numbers allows children to select programs easily.

One letter exercise asks children to type the missing letter into an alphabetical sequence of letters. For example, students type a *G* into *EF...H.*

With the help of a little wild-haired creature named "Wuzzel" (program #7), kids learn basic mathematical skills. In one exercise, students count identical objects in a group of mixed objects. For example, a mixture of cats and cars appear on the screen. The program asks the child to count the number of cats that appear on the screen and type in the number. Then it asks the child to count the number of cars. A correct answer makes little "Wuzzel" jump up and down, wave a flag, and even do somersaults.

Price: $37
Policies: Back-up included with disk; 30-day preview
Source: MECC, 2520 Broadway Dr., St. Paul, MN 55113-5199

David Fiday
Media Director
Laraway District 70-C
Joliet, IL

LINCOLN'S DECISIONS

COMPUTER: COMMODORE 64, PET, TRS-80 MODEL III, APPLE, ATARI 800
TOPIC: SOCIAL STUDIES
LEVEL: GRADES 5–12

Lincoln's Decisions teaches about the 12 critical decisions in President Lincoln's career. Students predict Lincoln's decisions from a series of facts. Clues, maps, and time lines provide additional information. A vocabulary assistance section teaches key Civil War terms and an optional section provides information about Lincoln's early life.

The program offers good graphics, a management and scoring system, and a helpful manual. A class studying the Civil War period could benefit from this program. It could be a valuable resource in a library or learning center, too.

Price: $49
Policy: $10 for back-up; 30-day preview
Source: Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520

Ann Dana
Microcomputer Consultant
Hinsdale Junior High School
Hinsdale, IL ☐

(Continued from page 30)

- Write the following on the board.

```
20 5 + 10
30 22 * 9
40 13 / 1
10 12 - 7
```

Tell kids to use what they just learned to write the output of the line statements above. (RUN 5, 15, 198, 13)

USING THE TASK CARDS

Cut out the six task cards, laminate them, and file them in your center or lab. Put your computer in BASIC mode, and kids are ready to follow the cards.

The directions on the cards are simple enough for children in grades four and up to follow independently. Allow students a full 20 to 30 minutes to work on each card. (Encourage experimenting!)

Here is a summary of each card's objectives.

1. What's Next, Boss?—Students learn to break down directions into individual steps by telling a partner how to draw a geometric shape. (Students need graph paper for this activity.)

2. Getting the Message—Students learn they must use BASIC words to boss the computer. They are asked to input synonyms for some of the commands and hence, do not get the desired response.

3. Spelling Bee—Students discover that commands must be spelled correctly, too. They input misspelled words and receive inappropriate responses.

4. Computers Need Order—Children learn that words in line statements must be ordered properly when they input their own line statements into the computer.

5. Find the Mystery Number—Kids get the computer to solve simple line statements. Answers to the problems:

```
PRINT 7+52
PRINT 1984-1969
PRINT 3 * 2 * 2
PRINT 59+15+12
```

The mystery number is 2.

6. Line 'Em Up!—Kids learn that if a program has more than one line statement, they must number the line statements in the order they wish them to be processed. Kids practice inputing three- and four-line programs.

Sandra Markle is the author of several computer books for children including *Computer Tutor Junior* (Learning Works, Santa Barbara, California) and *Kids' Computer Capers* (Lothrop, Lee, and Shepard, New York, NY).

ADVERTISER'S INDEX TO FREE MATERIALS

To obtain the literature or any of the services offered by the advertisers in this issue, note the numbers that precede the advertiser's name below and then circle the corresponding numbers on the tear-out reply card following page 8.

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16	Xerox Educational Publications	Inside Back Cover

the floppy copy you've been looking for

Across the nation, Data Command microcomputer programs are winning the applause of teachers and students alike! They zero in on crucial reading and math skills, constantly challenging pupils toward mastery with color, excitement, success!

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Bookshelf

by Judy Simmons

THE BEST OF COMPUTER WORKBOOKS

IF YOU'RE FAIRLY NEW AT TEACHING about computers, and you'd like to use a workbook with students, then I have several to share with you.

Michael P. Zabinski's ***TRS-80 for Kids from 8 to 80, Volume 1*** (Howard W. Sams and Co.; 1982; $9.95) is great for upper elementary students. Zabinski originally wrote the book for kids in his computer camps, but the book became so popular it was mass marketed.

The workbook is light and humorous thanks to designer Linda Yakel. It begins with simple explanations and pictures of the TRS-80 Models I and III. Each chapter presents new material, gives examples, and provides exercises to measure comprehension. Various challenges, experiments, and sections called "Fun Times" encourage students to investigate further.

Most teachers will like Zabinski's "learn by doing" approach and, when students are finished "doing" volume 1, they can start right in on volume 2.

Another good workbook for fourth to sixth graders, this time for Apple users, is ***Meet the Computer*** by elementary school teacher Marjorie Crabbe (Crabbe Associates; 1982; $9.95 or $7 for orders of 10 or more).

Although not as snazzy in appearance as Zabinski's book, the pages of *Meet the Computer* are uncrowded and the print is large, making the book easy enough for fourth graders. *Meet the Computer* begins with an excellent analogy between the operations of the brain and those of the computer and then progresses through the fundamentals of programming in Applesoft and concludes with exercises on graphics.

A rather unique combination Glossary/Index is included.

You'll also appreciate the teacher's guide with answers and the four-page "Meet the Computer Post Test" that can be used for student evaluation.

Another introductory programming workbook, in separate versions for Apple, TRS-80, and Radio Shack's Color Computer users, is ***Computer Programming for Kids and Other Beginners*** by Royal Van Horn (Sterling Swift; 1982; $9.95 each).

The book begins with an overview of hardware components and their uses. It moves onto programming loops and graphics. The large print and the red or blue highlights covering important information is helpful for third and fourth graders, or even to more advanced second graders.

The appendix covers sample programs, instructions for saving programs on tape and disks, and suggestions for teachers and parents. One teacher's guide for all the editions is also available for $9.95.

What about workbooks for the VIC-20, PET, and Atari computers, you ask? For older students, I recommend Aubrey Jones, Jr.'s ***I Speak BASIC to My Computer***, available in VIC-20, PET, Atari, TRS-80, Apple, and Commodore 64 (due Dec. 1983) versions (Hayden Book Co.; 1982–83; $9.95 each).

The book presents a field-tested computer literacy course in BASIC programming. The course, which Jones says he has used successfully himself, was designed to introduce disadvantaged middle school students to computers. The text is a bit difficult for some upper elementary students and may require teacher supervision.

A teacher's manual ($18.75) contains suggestions for lesson planning and answers to exercises and tests. A set of reproducible exams is available for $15 and a "Classroom Set" of *I Speak Basic* containing one teacher's manual, 20 student texts, and one exam set costs $200.

COMPUTER POSTER BOOKS

Perhaps your computer curriculum is already established and you're now looking for those little "extras" to add a touch of spice. How about some posters for your bulletin board?

Camelot published two Donald D. Spencer poster books last year: ***The Computer Poster Book*** and ***Famous People of Computing***.

The Poster Book contains about 40 pages of 8½" x 11," blue-on-white educational posters with commentary on computers in general, computer equipment, computer history, computer applications, and computer cartoons. *Famous People of Computing* contains similar posters of 39 famous people in computer science.

Although the printing quality is mediocre, the drawings and commentary give a good overview of general topics and are great reinforcements for computer literacy lessons.

COLORING BOOKS!

For younger kids, try a computer coloring book. Again, you can turn to Donald D. Spencer and illustrator Linda King for material. In their book, ***Microcomputer Coloring Book*** (Camelot; 1982), kids named Bob and Robin introduce students to the world of computers from hardware to flowcharts to computer languages.

Alan Freedman and illustrator Eric Jon Nones have created ***The Computer Coloring Book: It's Not Just a Coloring Book!*** (Prentice-Hall; 1983; $6.95). Indeed, more than just pictures to color, the book offers 50 definitions to take us through the ABCs of computer technology. □

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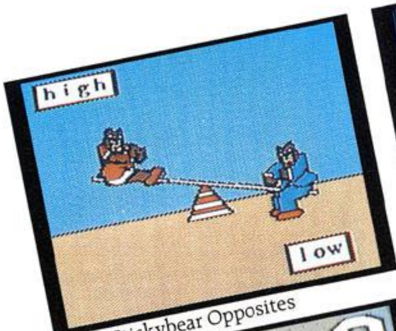

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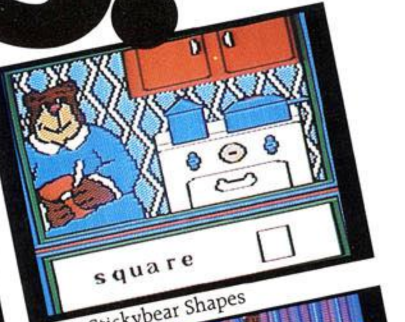

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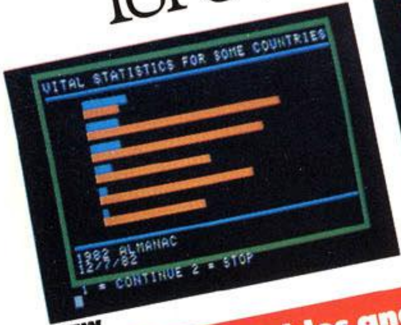

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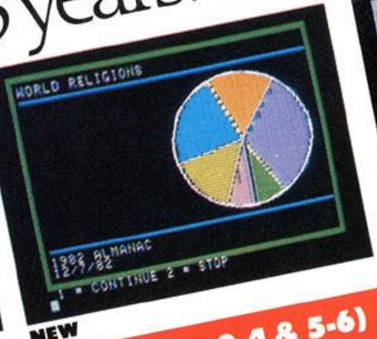

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Kids can't resist the bubble-gum colors and cartoon-like animation with the most advanced color graphics ever for the Apple! Includes a hardcover book, poster and stickers. Only $39.95 each. Developed by Optimum Resource, Inc.

Look for these NEW programs in computer stores everywhere. Contact your educational software distributor. Or, order by sending a check or money order for the amount shown, plus $2.00 per program for shipping and handling. Mail to Weekly Reader Family Software, Dept. AB-47, P.O. Box 16754, 1250 Fairwood Avenue, Columbus, Ohio 43216.

Stickybear is a registered trademark of Optimum Resource, Inc. Apple and Apple II, II +, IIe and III are registered trademarks of Apple Computer, Inc.

For Apple II or Apple II + with 48K and one disk drive, 3.3 DOS; and Apple IIe or Apple III. Use with paddles or keyboard.

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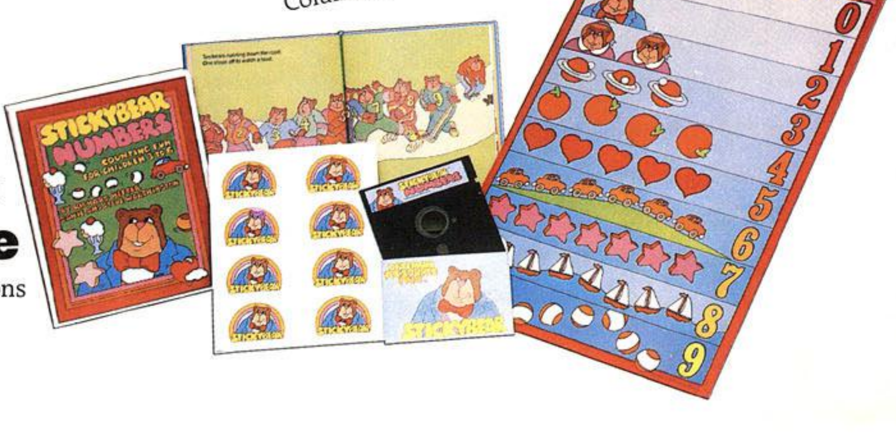

Weekly Reader Family Software

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In short, it's an 80-page plain-English, graphically stunning, pocket-sized definitive guide to the care and feeding of flexible disks.

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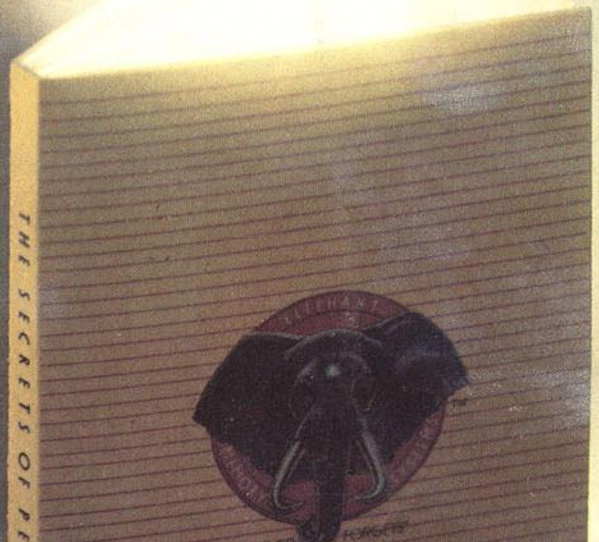

CIRCLE 7 ON READER SERVICE CARD

The following pages are missing from this document:
Calendar (pages 41-42)

The following pages were recovered from high contrast black & white microfilm:
Poster (pages 43-44)
Reproducibles (pages 49-50)

If you would like to contribute missing pages or issues, please contact me at:
MikeEBean@Hotmail.com

Thank you!
Michael Bean